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RAIL-ROAD NEWS.

A Railroad to the Pacific.

We have heard nothing of Whitney's Railroad for some time, and while the utmost favor has been shown to other railroads in new States, by Congress, not a word has been said about the proposed great railroad to the Pacific. The railroad proposed by Benton, while he was Senator, is also lost sight of at present, but the time will certainly come when a railroad must, of necessity, be constructed for the purpose of uniting the Pacific with the interior of our country, and also with the Atlantic States. Our country is the Half-way-house between China and Europe, and when a railroad is constructed from the Atlantic to the Pacific, it will be the highway of nations to and from the East Indies, and China. It is also our opinion that Mexico will be absorbed by the United States before twenty years pass away, and then there will soon be a railroad built through the Isthmus of Tehuantepec, if it be not built before the act of absorption takes place. Before the discovery of gold in California, a gentleman who has resided in Mexico for twelve years, told us that it would be a good thing for Mexico if it were incorporated with the United States: he believed it would not be any benefit to our Republic, but an injury—that Mexico would be the gainer. The rapid growth of California has changed our view of this question; it would be better, both for Mexico and the United States, if they were united together; the union should, and we believe can, be brought about quietly by agreement.

Paving in Paris.

According to the report of the Administration of the Public Streets, the common method of street paving in Paris, by means of square blocks of stone, costs annually ten sous a square yard for expense of keeping it in repair. Macadamizage, on the contrary, costs eighty sous a square yard. The Macadamized streets in Paris are kept with a degree of care which would be out of the question in any other place. Men live upon them, and do not quit them five hours of the twenty-four. Besides being swept once a day, they are examined every morning, and any irregularities removed, and any concavities, ruts, or hollows, replenished from carts that are held continually in readiness. Notwithstanding the cost, the Rue de la Paix and the Place Vendome are to be immediately Macadamized. Numerous experiments have been tried with various mixtures of bitumen and finely-ground stone. Asphalt sidewalks are now in general use; but all attempts to render such a composition solid enough to resist the action of wheels and hoofs have entirely failed.

It is said that since the completion of the railroad through Northern Indiana, the wolves which came from the North, and were so savage on the flocks South, have not been seen South of the track. The supposition is that the wolves mistrust the road to be a trap, and they will not venture near its iron bars.

PATENT CAST-IRON CAISSONS.

Figure 1.

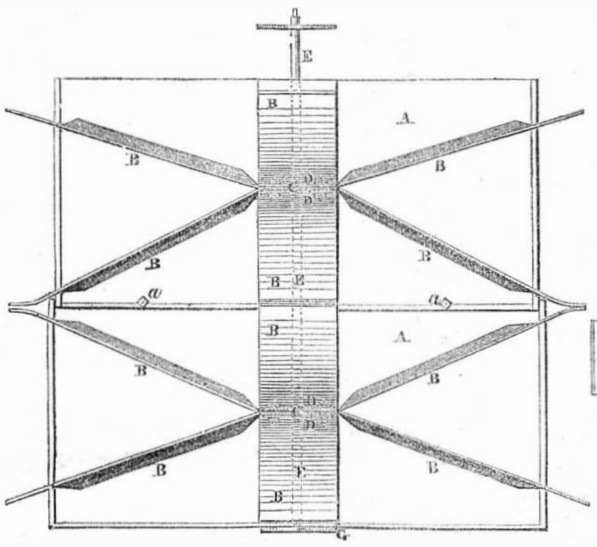
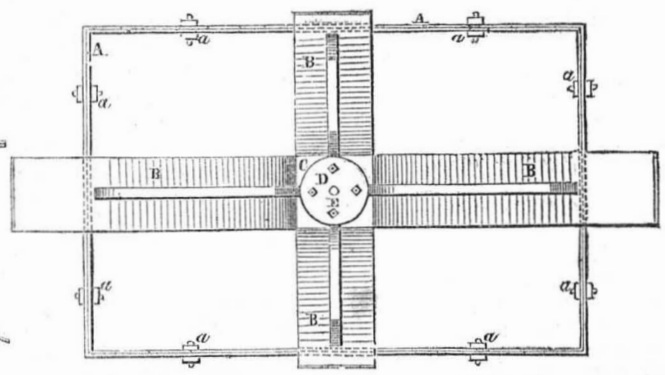


Figure 2.



This improvement is the invention of James P. Duffey, of the city of Philadelphia, and was patented on the 13th of last month (July, 1852). Figure 1 is a side elevation of two boxes, showing the braces and rods which connect the braces and boxes. Figure 2 is a plan view of the same. Similar letters on the two figures refer to like parts.

A A are two metallic boxes of rectangular form; each box has a series of braces, B; any number of them may be employed. C is a square plate at the centre where the braces meet. On these square plates, both on the upper and under sides, are flaunches, D, which have tie-rods, E, screwed into the flaunches, securing the plates, C, and supporting the braces, B. Each box, A, and its braces, are cast in one piece. The upper box in fig. 1, is somewhat smaller than the lower one, and fits a short distance within it. The screw bolts, *a*, pass through the sides of the two boxes and secure them together; any number of boxes may be secured together in this manner. By the above arrangement and construction of iron boxes or caissons, the pressure upon them is very equally distributed, and by them, a strong and durable breakwater, levee, or other like structure may be made. These boxes are to be filled with masonry in cases where this is required, and the lower flanch, G, in fig. 1, will be imbedded in the earth. The outer ends of the braces may project a short distance beyond the sides of the boxes, and screw bolts will pass through them to secure the whole firmly together. The boxes may be cast of any size or form that the required structure is desired to be made, and they will be found to be very useful in constructing piers for harbors, in many places of our country.

More information may be obtained by letter addressed to the patentee at 91 South Eight street, Philadelphia, Pa.

IMPROVED GRAIN CLEANER.

Figure 1.

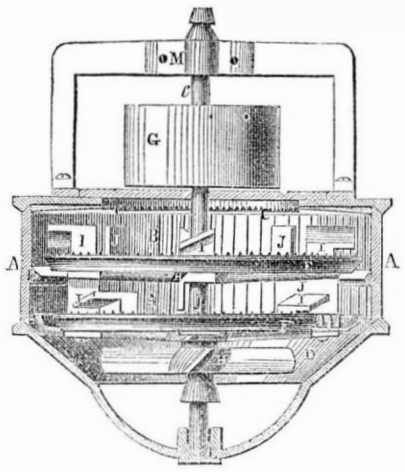
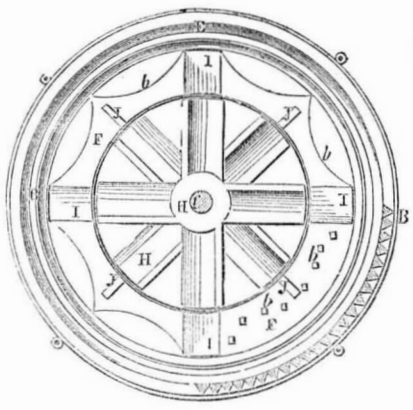


Figure 2.



The accompanying engravings are views of an improved machine for scouring grain and separating all impurities from it. The inventor is H. L. Fulton, of Chicago, Ill., who has taken measures to secure a patent for the same. Figure 1 is a vertical transverse section, and fig. 2, is a horizontal section looking downwards. The same letters of reference indicate like parts. A is a case formed of prismatic bars with small spaces between them, for the dust, &c., to pass through. B B show the prismatic form of these bars. C is a top plate, having its underside formed of prismatic bars. F F are dish or concavo-shaped plates, the one placed above the other, and secured on the shaft, *c*, by a collar. These dish-shaped plates are cast with projections, *b b*, on their surfaces, as seen in fig. 2, also with inclined fans, I I, and upright arms, J J; both plates are formed alike. There is a rim which stands up around on each plate, F, a short distance from where the shaft, *c*, passes through, thus leaving a space through the centre of the machine; this rim, upon each plate makes the grain pass over from the centre to the circumference on the concave rough surfaces thus making it move over the greatest space. M is the top journal box of the shaft, and L is the lower one; D is the inclined passage for the grain to pass out below, after it has been operated upon, and is thoroughly cleaned. H is a spiral blower, which takes in a current of air, and drives all the light impurities, dust, &c., up and out through the spaces between the prismatic bars, B, which form the case, A. The grain is fed on to the top dish-shaped plate, F, by a hopper at the one side, on the top; the inclined beaters, I, receive and throw it up against the bottom of the serrated top plate, C, thus beating it, to break smut balls &c.; it is also acted upon by the projecting arms, J J, and teeth, *b b*, and scoured on its passage to the edge of the said dish-shaped plate. When it passes over the edge it is directed to the centre of the lower dish-shaped plate, F, by a concentrating inclined bevel ring, E, which is secured on the inside of the bars of the case. The action of the second concavo-plate, F, upon the grain, is like that of the upper plate, F, the centrifugal action of the revolving plate, makes the grain pass from the centre to the circumference, rotating, and rubbing against the rough projecting surfaces, and it at last passes over perfectly cleaned, down the inclined outer passages, D, to the receptacle below. G is a pulley for driving the shaft, *c*, by a band from any prime mover, so as to give motion to the fan, H, and the dish-shaped plates, F F.

There are a number of good points about this machine; the case being formed of prismatic bars, allows of it being made light and strong, and at the same time the dust, &c., whenever it passes outside through the spaces between the bars, drops down at once, for there is a partial vacuum formed on the outside, by the entrance to the spaces being funnel-shaped both ways, which contracts the current, and then allows it to expand outside. The dish-shaped plates, F F, and their peculiar construction and action, are good and new features in this machine. It is simple, being all made of cast-iron, and it is not liable to break or wear out.

More information may be obtained by letter addressed to the inventor.

Poison Ivy.

Bro. Z. Breed, of Weare Centre, writes us that, from his own repeated trials, there is no remedy so sure and speedy for curing the poison of common ivy, as that rendered by simply chewing tender leaves of the plant itself. Many poisons that wound externally are quite innocuous when taken internally; and some have a counteracting influence. This is the case with ivy without doubt. Bro. Breed is a man whose word can be relied upon, and we recommend our friends, at this season when so many opportunities are offered, to give it a fair trial.—[New England Farmer.

The challenge of the American shipbuilders has been published in the London papers; we do not believe it will be accepted. Will the English shipbuilders—the reputed rulers of the seas—acknowledge *beat* decently, or accept of it at once?

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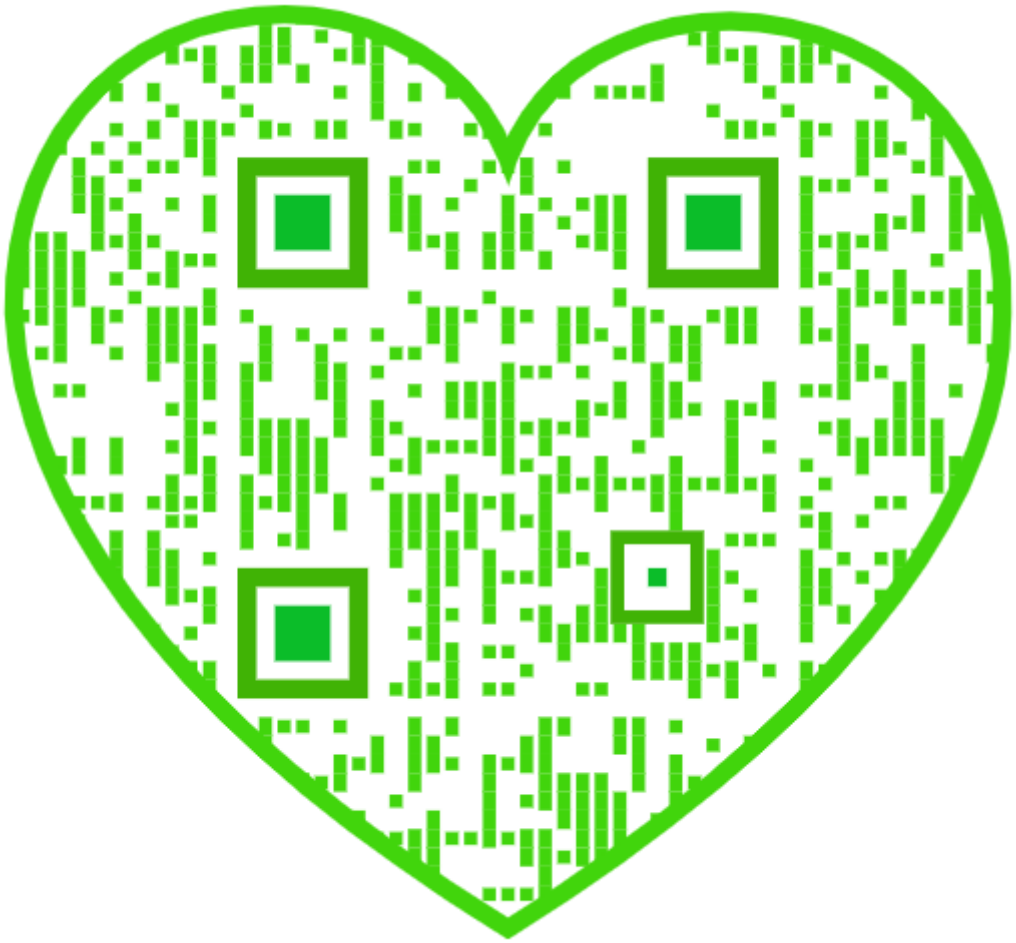

MISCELLANEOUS.

Rail Axles, Wheels, Curves Upon Railways.

A very able and experienced, C. E., has written some important articles which have appeared in the Journal of Commerce, upon the subjects which the caption of this article stands for a test. We present a few extracts. He says:—

"The remarks which I have made in connection with this subject, have been extensively copied and favorably received by all, excepting Appleton's Mechanics Magazine, the editor of which, himself a 'Civil Engineer,' has sent forth such remarks as may well astonish the 'practical' men (barring the algebra) among whom he appears desirous of ranking. Here is a man, belonging to a profession, the very foundation of which is pure geometry, pretending to sneer at its application as of no 'practical value,' although 'a beautiful theory.' What jargon is this? What is the whole profession, on the main, but theory? Was not the greatest piece of modern engineering erected entirely upon theory, *i. e.*, 'inferences drawn from principles which have been established on independent evidence?'

I claim for the old engineers a far more just appreciation of the pure geometry of the railway, of the rolling stock, and even of the locomotive itself, than is commonly exhibited by those of the present day; and it is only by going back to 'first principles,' and restoring the 'ancient landmarks' which have been removed, that we can hope to avert those frightful accidents which so frequently occur, and which are in general so unsatisfactorily accounted for. We have seen what the editor is 'unable to determine;' and we have his thoughts next, thus: 'but think we can perceive from the treatment of the subject, that he has yet something to learn in the practice of railroad engineering.' Now, if this is anything other than an impertinent application of a mere truism, it means, *ergo*, 'I,' the editor, 'have nothing to learn,' on that subject, and I may add that he appears very desirous of learning it, did I not conceive that the printer's devil had usurped the editorial chair."

The question in dispute between them, is respecting the mooted point, "does steel become crystalline by vibrations." Here are the views of both sides:—

"The editor goes on to say:—'We know, beyond cavil or doubt, that incessant vibration will produce a square fracture, resembling that of cast-iron.

'Experiments, carefully conducted, have shown that repeated blows will produce this fracture in wrought iron; not an accident, resulting from the peculiar organization of the particular piece under trial, but an effect to be relied on in all cases.'

Well, if that is not "begging the question," or rather stealing it, and with a pretty high hand too, I don't know what is.

It is the very fact in dispute, and this enunciation makes me question if I have not been living in the woods, instead of among the metals, for the last half century. I don't know anything about these things which are so unceremoniously thrust forward as "beyond cavil or doubt." But I do know of some experiments made to a "foregone conclusion," to order; and I have seen some which did not, in my opinion, by any means, support them; and no less a personage than Mr. Stephenson himself expressed a doubt of the correctness of the conclusions drawn from others—valuable experiments as they were, and which, with all others that have ever been made, fully prove that no such thing as even moderately reliable certainty has yet been attained in the manufacture of wrought iron or in the results of any experiments that have ever been made therein.

But the concluding remarks are absolutely of the bare-faced and grossly erroneous assumption, that anybody can mistake the object of elevation of the outer rail. I give the conclusion in full, and it would appear almost ridiculous to reason with one who appears to make his assertions as he wants them, out of whole cloth, to stand for facts which they have no relation to, and to mix up matters of mere opinion with the exact sciences, as though they were equally subject to the fiat of a civil engineer in printer's ink.

'T. A. R. makes a grave mistake when he attributes the fracture of axles to the coning of the wheels, which latter practice he should have known has long since been abandoned. He mistakes the object of elevating the outer rail of the track entirely; and all his fine-spun views in reference to there being no centrifugal force generated, are without one particle of practical value. The coning of the wheel is a beautiful theory, supposing the rails, wheels, &c., to be perfect; but owing to unavoidable imperfections in these, is no longer attempted on our roads as a means for preventing the contact of the flange with the rail.'

As my experience on this subject has been of a more practical nature than a genteel civil engineer may perhaps care to boast of, I may as well say that I am fully aware of the fact, that less coning than I have stated is becoming very common, and that more elevation of the outer rail than any theory (whether a correct one or not) has ever pretended to justify, is also very common.

I do no not know of any one who repudiates coning altogether; although there may be such persons to be found, I esteem it but little better than a libel upon the profession to assert that it is a general practice. I have seen some thousands of flanged wheels in different parts of the world, but never yet have I seen one that was not coned.

The foregoing remarks are made with great reluctancy, to guard the public against grave errors and false statements of facts, made in the most unscrupulous manner; and so obnoxious to all just criticism, that nothing but a sense of duty has induced me to make any reply whatever, to remarks so entirely destitute of reason and facts." T. A. R.

A Good Way to Save Life.

A correspondent of the New York Sun proposes a most excellent plan for saving life in cases of disasters like that of the Henry Clay. It is thus described:—

"My plan is to have every stool on board so constructed that in the hour of need some one or two hundred staunch life-preservers shall be scattered over the deck. Lightness and cheapness are the main requisites in their construction; both are to be had easily. I will just throw out two ideas. The first is to have the body of the seat a water-tight hollow substance, such as a tub or a gutta percha bladder encased in wood work; but of course there are strong objections to anything that derives its buoyancy from the exclusion of air or water, as one or two year's use would be apt to make some fatal punctures. The most preferable plan would be a space filled with cork-cuttings (very few would bear up two or three men) or else a framework with a seat of this material; and by all means attach three or four cords with floats at the ends, which, should misfortune demand their use, would stretch out on the water as so many arms to tempt the despairing clutch of the drowning person, when otherwise he might not have strength or time to reach the main substance. Of course this cursory idea will bear improvement. Cannot some Yankee friend follow it up in time to have a specimen in Castle Garden at the next Fair?"

The above should meet with prompt attention. In volume 6, Scientific American, page 59, the same plan was proposed by our foreign correspondent.

Remedy for the Bite of a Snake.

Mr. Abraham Kemp, who was bitten on the hand last week by a copper snake, immediately rubbed his hand several times on his pantaloons, which caused the blood to flow freely. Within the space of four minutes he chafed the wound with brandy, and applied to it sliced white onion and salt; he then applied spirits of hartshorn, which he repeated five times, and, although a very temperate man, he was advised to drink copiously of brandy—perhaps two or three gills in all. Two or three times next day he complained of a slight pain in one of his fingers; and in the afternooon, the inflamation having subsided, he succeeded in extracting the fang.—Since then he has felt no inconvenience from the bite whatsoever.—[Frederick (Md.) Examiner, 28th.

The Eight Wheeled Car Cases.

It seems that litigation is going on amongst the Railroad Companies and Car Builders, defending themselves against suits brought by Ross Winans, under a patent dated October 1, 1834, and extended by the Chief Clerk for seven years. The legality of an extension by that person is strongly disputed, as well as the validity of the Patent on other grounds. And a motion for an injunction on Eaton, Gilbert & Co., of Troy, to prevent them from manufacturing eight-wheeled cars, similar to those now exclusively used on railroads, was heard before the Hon. Alfred Conkling, at Auburn, on the 27th of last month. A former motion was denied, because the plaintiff did not show possession, and leave was given to renew the motion. In the meantime the defendants employed additional counsel from Philadelphia, and although the plaintiff's efforts to remedy the defects of his former motion were partially successful, the aspect of the case had become so changed by the exertions of defendants' counsel, that great doubt existed in the mind of the Court in the case. The injunction was therefore refused, and leave given the complainant to renew his motion on twenty days' notice, at any time within three months.

Sunken Rails.

It has been suggested that sunken rails would answer far better for railroads in cities than the raised rails. The great objection against railroad tracks, in cities, is, that carriages and carts cannot pass over the rails but at nearly right angles. In some places the rails are laid down in our city in such a manner that vehicles can pass over the track at a very acute angle, but we have oftentimes seen carts sorely troubled in crossing the track. It appears to us that a sunken rail would not mend the matter one whit, but would rather increase the evil. A rail made with a groove in its centre, and set flush with the pavement, and wheels cast with a central flange to run in the groove, but the tread to rest and run on the two flush faces of the rail, would no doubt obviate all the evils spoken of. This plan has already been carried out in principle by the kind of rail laid down by the New York and Harlem Railroad, against which we cannot see any possible objection, nor have we seen a plan, among the great many suggested, equal to it.

Wooden Cornices.

Wooden cornices have been instrumental in the destruction of an incredible amount of property. The following facts, stated by a correspondent of the Boston Atlas, in viewing the scene of the late fire in Montreal, show the impolicy of continuing to construct buildings with this appendage:

I walked over the ruins, until I came to the spot where once stood the Bishop's Church and Palace, all in their architectural beauty and grandeur. I gazed upon the dilapidated walls and broken columns with feelings of astonishment. And who would not be astonished at such an exhibition, especially when it is clearly seen how the fire commenced the work of destruction upon these noble buildings. They were built of hewn stone, and the roofs handsomely tinned. They were almost fire-proof, and would have been quite so, as least so far as this conflagration was concerned if the builders had used a little more tin. But no! the eaves, troughs and cornices were made of wood—and could they have done anything better to make the fire take easily? The flakes of fire fell upon the tinned roofs and slid down to the eaves, where sufficient combustible matter was found to ignite and destroy the buildings.

The Voltaic Lemon.

The celebrated Professor Bakoffner has been making some experiments lately at the London Polytechnic Institution, with a new magnetic or electric vegetable pile discovered by Dr. LeMolt, surgeon. It consists simply and solely of a lemon, possessing in itself the elements of the galvanic pile, the exciting acid, the porous membrane, and the reservoir which is formed by the lemon skin. The length of its action depend on the amount of citric liquid the fruit contains, and its influence can be actively felt for eight or ten days. This simple and ingenious voltaic pile can decompose water, acts powerfully on the magnetic needle, precipitates metals, and can, in the shape of a battery of six or eight lemons, send telegraph dispatches across the Straits of Dover.

[This we have seen in a number of our exchanges; we give it for what it is worth.

Repairing a Ship's Bottom While Afloat.

The following method of repairing a vessels' bottom while afloat was adopted and put in practice by Mr. Moody, shipwright, on the Geyser, a steam sloop of war, whose bottom was greatly injured by the striking on rocks, 50 miles from Rio De Jeneiro. The annexed description is given by Mr. Moody is taken from the London Civil Engineer and Architects Journal:—

"In obedience to directions to report the manner in which I proceeded to replace a defective sheet of copper on the bow of Her Majesty's ship Hyacinth, the same being five feet below the light water-line, I beg to state, that on considering what means could be adopted for so doing, short of heaving the vessel out, it occurred to me that the principle of coffer-dam might be applied to it. I accordingly caused a water-tight case of three sides and a bottom to be made, ascertained the curve on the bow on each side of this defective part, and cut the mouth or open side of the case to fit it; and having lined or dressed the curved edges with felt, saturated with tallow, and attached ballast to the bottom, the case was suspended by a tackle to the rough tree rail, and lowered until the top was within a few inches of the surface, opposite the defective part, over which it was hauled by means of two hawsers, one placed vertially from the rough tree rail under the keel to the opposite side, the other horizontally from the quarter round to the stern, to the opposite side, and both set taut with tackless. By these means the case was made to fit close to the bottom, where it was further secured by a shore, reaching from the side of the ship to its outer edge, to prevent its rising. The suction hose of a fire engine was then placed in the case and the water contained in it pumped out. When empty, two shipwrights descended, and removed the defective copper, replacing it with a new sheet. The operation, from the time of suspending the case until completed, did not occupy more than twenty minutes.

This principle could be applied to the repairs of many defects under water, such as the wing cocks of ships, or the pipes in the bottom of steam vessels."

British and American Steamers.

The London Artisan publishes the letter of Messrs. Stillman, Allen, & Co., in reference to a letter by some person signing himself Britanicus, who stated that they had learned how to construct their engines "by obtaining permission of the proprietors of the Cunard Line" to take mouldings and castings of every part of the engines constructed by R. Napier, of Glasgow, Scotland. The Artisan takes part with Messrs. Stillman, Allen & Co. We, however, have always thought there was no use of those gentlemen answering such a letter, for it carried on its face that which condemned it. These gentlemen know that the proprietors of the Collins Line could not give permission to any body to take castings of the engines of the Atlantic while they were in the Novelty Works, neither could Napier allow of such interference,—every engineer knows this. It is known that Mr. Farron was in Glasgow for some time, but nobody here believes he ever took a mould or casting from Napier's Works. In all such controversies, as a general thing, both sides claim too much.

Submarine Blasting.

Messrs. Maillefert, De Raasloff, and E. Merriam, have been blasting away for two weeks past, at Diamond Reef, opposite this city. It will require about 20,000 lbs. of powder to reduce it to twenty feet below mean water level.

There appears to be some fears for the loss of our mackarel fishing grounds on the coast of Nova Scotia. The British have a large fleet there to keep our fishermen from approaching nearer than three miles to any shore or bay.

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Attaching Patent Property.

Messrs. Editors:—In consequence of my absence from town, your letter of the 20th inst., did not reach me till to-day. In reply to your question as to whether Letters Patent can be reached by process of law for the benefit of creditors, I answer, that the privilege or interest secured to the patentee by Letters Patent, for a new invention, is a species of incorporeal personal property, and is recognized and treated as such both by the laws of this and other countries. Such interest can, therefore, be reached by attachment and subjected to sale under the direction of a court for the benefit of creditors, in the same manner, and on the same principle as other attached personal property.

In this State there are three proceedings by which the property of a debtor may be taken in suits by creditors, and applied to the payment of his debts.

First, Attachments.—These are issued only on certain conditions, such as the debtor being a non-resident, or his secretly departing from the State, or keeping himself concealed therein, to avoid the service of process or to defraud his creditors, and they are usually issued at the commencement of suits. By an attachment, the sheriff is required to take into his custody all property of the debtor, not exempt from execution, and retain it, subject to the order of the court to secure the payment of any judgment the plaintiff shall obtain, and to be ultimately applied, by trustees, to such payment.

This proceeding reaches all property of the debtor, whether tangible or intangible, including rights to things as well as things in possession. It will, therefore seize any interest of the debtor in a patented invention, and subjecting it to a sale, will apply the proceeds to the payment of his debts.

Second, Executions.—An execution is a process issued after judgment has been obtained, and for the purpose of levying upon and seizing property of the debtor sufficient to pay the judgment. But this proceeding takes only tangible property, and does not reach such rights, and things in action as cannot be seized and carried away by the officer, such as debts owing to the debtor, stocks owned by him, &c. This proceeding, therefore, will not reach any interest of the debtor in a patented invention.

Third, Certain Proceedings Supplementary to Execution.—These are proceedings taken by the creditor to reach the intangible property of the debtor after the sheriff has failed in his effort to collect the amount of the judgment on an execution, and out of his tangible property, and any interest of the debtor in any invention secured by Letters Patent, falls within the scope of, and will be reached and taken by this proceeding.

The statutes of the several States differ in the provision of means for taking a debtor's property and applying it to the payment of his debts; but all have some provision by which his things in action and intangible property, including patented inventions, can be taken, as well as tangible property.

The power of courts in taking a patented invention, and appropriating it to the payment of the debts of its owner, is based upon the assignable quality of such interest. Patents for inventions are made assignable both by the terms of the patent (the grant being to the patentee, "his heirs, administrators, or assigns,") and by the Act of Congress (Act of 1836, sec. 11.)

Both the proceeding by attachment and the proceedings supplementary to execution, ultimately compel the debtor to assign his property, including patented inventions, for the benefit of his creditors; this assignment is as valid and effectual as if it were voluntarily made, and thus the right and interest is transferred from the debtor to trustees, and by them to the purchaser. Respectfully yours,

Geo. Gifford, 17 Wall st.

New York, July 26, 1852.

[We have always entertained the opinion expressed by Mr. Gifford, and cheerfully give place to his letter, as a complete answer to many inquiries upon this point. He is an eminent counsellor, and has devoted much attention to Patent Law, and trials connected therewith; the information which he imparts is interesting to strangers.—Ed.]

African Cotton.

The Manchester Commercial Association has received intelligence of the successful result of some experiments in cotton cultivation at Cape Coast Castle, in Africa. A year and a half ago some of the members of this association subscribed upwards of £1,500, ($7,500,) towards an experiment of this kind. The money was sent to agents (merchants generally,) at Cape Coast Castle. A site was selected, about five miles inland, on the banks of a small stream, and the process of planting the indigenous cotton shrub was commenced. The plant is perennial, and grows to a considerable size, the stalk being in many cases several inches in diameter. The seeds are kidney-shaped, and they lie matted together in the pod, very much like the Brazilian species.

From time to time, very flattering accounts were received of the success of the experiments, and a short time ago some bales of it were received in Manchester. It resembles the Egyptian, is of a good color, of fair, short staple, and was cleaned well with the saw gin, and was worth 6d sterling per pound.—The cost of its production and carriage to Manchester was 3d sterling. The native Africans accepted work with alacrity and evinced a pride in being employed by Europeans. The men worked diligently for two dollars per month, and the women for a dollar and a half. They worked eight hours per day. A number of new plantations have been started, and on one lot there are 20,000 cotton trees. The Liverpool Times considers the experiment a very successful one.

A Great Chemist Gone.

Dr. Thomas Thompsom, Regius Professor of Chemistry in the University of Glasgow, died on the 2nd of last month, at the advanced age of eighty years. He had occupied the chemical chair for nearly half a century. Dr. Thomas Thompson was the author of the "History of Chemistry," an extended work on chemistry, and the allied sciences, Heat and Electricity; and in connection with his nephew, Dr. R. D. Thompson, he published annual reports on the progress of Chemical Science, &c.

His works are to be found in all our public libraries, and in those of our chemists.—He saw the rise of chemistry from the state in which it was left by his predecessor, Dr. Black. Dr. Ure seems to have had a grudge against Dr. Thompson, as he takes every opportunity in his chemical Dictionary to disparage him. In Glasgow Dr. Ure was less esteemed for his chemical knowledge.

Georgia Agricultural Society.

Tribute to Men of Mechanical Genius.—The following is an extract from the eloquent address of the Hon. Garnett Andrews delivered before the Central Agricultural Society of Georgia, at their last Fair, which was held at Macon:—

Much, yet none too much, money have been paid to schools, academies, and colleges; but we have greatly overlooked and neglected those who have gone in advance of all learning; those who learn new things for your colleges to retail out to the rest of mankind; those patient, and often neglected, pioneers of science, who work out, from the great mine of nature, hidden truths, not for their own, but for the benefit of the world. Those who learn only that which was known before, benefit themselves; but he, who learns something unknown, benefits his race. The latter gives to the world, the former distribute knowledge, taking ample commission for their labor. To these patient and often unrequited, sons of genius are we indebted for the abundance and luxuries of life, so much increased within the memory of us all. To such men as Arkwright and Whitney, our wives and daughters are indebted for their freedom from the slavery of the loom and spinning-wheel, in which our mothers and grandmothers served out their lives. To them are we indebted for the comfortable and decent clothing in which our families are, and have been, so long and cheaply clad, that we have forgotten to appreciate its value. To the discoveries and inventions of genius are you indebted for the comforts and conveniences which surround your homes, unknown to princes a few generations past. Thirty years ago nearly all cotton goods were five times, and retail articles generally, averaged double their present value. For this reduction in the cost of living, we are, perhaps, more indebted to these men than any, nay, all other causes, together.

Frederick the Great had just terminated the seven years war, so triumphantly, and so much to his renown; Peter the Third of Russia had just been assassinated; the world was ringing with these events and speculating upon their future consequences, while Watt, the obscure Scotch mechanic, was patiently working out those truths concerning the Steam Engine, in the magnitude of whose consequences, Frederick, and Peter, and Catherine, and all their wars, sink into that insignificance from which the great inventor emerged.—During the noise of the battles of Jena, Friedland, and Corunna, Fulton, under the jibes of the ignorant and inconsiderate, silently consummated those improvements which have set the great "iron apostle of civilization" on his travels, and whose heavy tread is heard throughout the globe, carrying blessings to all men. Who can say the great Emperor, whose glory then filled the world, has blessed mankind? Who dare say his humble cotemporary has not?

New Test for Mercury.

The following test for mercury was given by A. Morgan, and recently published in the Dublin (Irish) Press:—

If a strong solution of iodide of potassium be added to a minute portion of any of the salts of mercury placed on a clean, bright plate of copper, the mercury is immediately deposited in the metallic state, appearing as a silvery stain on the copper, which cannot be mistaken, as no other metal is deposited by the same means.

By this method, corrosive sublimate may be detected in a drop of solution, unaffected either by caustic potash or iodides of potassium. In a mixture of calomel and sugar, in the proportion of one grain to 200, a distinct metallic stain will be obtained with one grain, which, of course, contains 1-200ths of a grain of calomel; in like manner 1-400ths of a grain of peroxide of mercury may be detected, although the mixture with sugar is not in the least colored by it.

With the preparations of mercury in the undiluted state, this process acts with remarkable accuracy; the smallest possible quantity of calomel or peroxide of mercury, such as would almost require a magnifying lens to perceive, placed on copper, and treated with iodide of potassium, will give a distinct metallic stain.

The advantages of this test may be briefly stated as follows:—1st, it is a delicate test, inferior only to chloride of zinc and the galvanic test of zinc and gold; 2d, it is easy of application; 3d, it requires a very small portion of this substance to be examined, a matter of no small import; 4th, acting on the insoluble as well as the soluble salts, it obviates the intermediate process of solution; 5th, when it acts, its indications are decisive.

As to the disadvantages, the only one which seems tenable is, that although it acts on minute portions, still, that must be in a concentrated condition. For instance, though we may detect the 1-1000th of a grain of corrosive sublimate in a drop of water, we cannot detect it in a drachm; but this may of course be remedied by evaporation.

Now, with regard to the theory of this process, the following seems most satisfactory; that the iodide of potassium forms a soluble and easily decomposed salt with the various salts of mercury, that is, an iodide solution in excess of the iodide of potassium.

Bathing.

Nature indicates the season just arrived as the one when frequent ablutions are conducive to health, by frequently removing from the surface of the skin the accumulations that result from its functions. We do not approve of living in the water, because it is agreeable in hot weather; and it is quite certain that the practice, in extremely cold weather, of leaping from a warm bed and suddenly extracting all the caloric by cold water, has been ruinous to multitudes of delicately organized ladies. They speak with delight of the re-action of the blood, the after glow; but the demand upon the vital apparatus to bring that about, vitiates the complex machinery of life, after a while, and a debility follows which can only be overcome by abandoning the luxury that produces it.

Evening is a better season for bathing than morning, for the water relaxes the system and sleep brings it up again for the next day's toil.

A Passing Thought.

Rothschild is forced to content himself with the same sky as the poor newspaper-writer, and the great banker cannot order a private sunset, or add one ray to the magnificence of night. The same air swells all lungs. Each one possesses, really, only his own thoughts and his own senses, soul and body—these are the property which a man owns. All that is valuable is to be had for nothing in this world. Genius, beauty, and love are not bought and sold. You may buy a rich bracelet, but not a well turned arm to wear it—a pearl necklace, but not a pretty throat with which it shall vie. The richest banker on earth would vainly offer a fortune to be able to write a verse like Byron. One comes into the world naked and goes out naked; the difference in the fineness of a bit of linen for a shroud is not much. Man is a handful of clay which turns quickly back again into dust.

Model of Europe.

A grand project has been proposed at Paris by the Abbe Moigno, a scientific writer of some note, and author of a work on telegraphing. It is to establish in the Bois de Boulogne, at the gates of the capital, a model, in relief, of Europe, with all its towns cities, rivers lakes, railways, mountains, and forests. Each country and each town would ocuupy space exactly proportioned to their real extent; every mountain would resemble, in geological construction and form, that which it would represent; and every river and railway would be of real water and real iron, and in length so many yards to the mile. This singular model would occupy several acres. The expense of forming it would, it is admitted, be enormous; but that, the Abbe contends, would be an unimportant consideration, compared to the instruction it would afford, not only to youth, but to people of all ages and professions, and the striking addition it would prove to the curiosities of the grand ville.

Application of Lime to thin Sandy Land.

Slake the lime with salt brine; when it falls into powder, mix with every 25 bushels of it, 10 loads of clay, layer and layer about; throw it into bulk, and let it remain two or three weeks. In the mean time, manure, plow and harrow the land, then shovel over the compost, so as to intimately mix the lime with the clay, and broadcast eleven loads of the mixture evenly over the surface of each acre, and harrow and cross harrow, and then roll, when the land will be fit to receive the crop which you may intend it for. If lime be thus applied to thin sandy land, ten loads of putrescent manure will actually perform more positive good, than would twenty loads applied without the addition of the clay, provided a bushel of plaster per acre be sowed over the land.—(Farmers' Journal (Bath, N. C.)

A Lofty Seat.

A singular wager came off at Antwerp, recently. The master of a merchantman bet another 400f. that one of his sailors would climb to the top of the steeple of Notre Dame, and remain seated on the weathercock for six hours. A sailor executed this dangerous feat. He climbed on to the cock at three o'clock, and remained seated till nine. A large crowd assembled, and remained until the man came down, cheering him heartily on reaching terra-firma.

Going to Europe in a Balloon.

M. Petin has written a letter to the Hartford (Conn.) Times about the construction of a large balloon to cross the Atlantic. This is a favorite idea of M. Petin, we hope he will live to accomplish his object.

The Central Railroad, from Rochester to Lockport and Niagara Falls, has opened auspiciously, and is doing a good business.

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NEW INVENTIONS.

Improvement in Gongs for Hotels, Steamboats, Locomotives, &c.

James Dew, of New York city, has taken measures to secure a patent for an excellent improvement in the mode of operating gongs. He employs an escapement formed of a catch enclosed within a suitable case, which is attached to the lower end of the hammer rod; a lever directly underneath the catch acts against it, and throws back the hammer, which strikes the gong as soon as the lever has passed the catch. The lever returns back to its original position, by throwing the catch within the case; both the hammer and lever have coiled springs attached to them, the hammer spring forces the hammer against the gong, the lever spring causes the lever to return to its original position after the hand is removed from acting on the pull. The employment of the escapement, and the combination of it along with the lever, which acts upon the said escapement, constitutes the improvement. It is one of merit; it makes a gong more effective, because it can be operated and controlled in a superior manner. For locomotives and steamboats, as an alarm to the engineers, it is certainly quite an improvement over the common modes of operating gongs or alarm bells.

Bellows for Melodeons.

Isaac T. Packard, of Campello, Plymouth Co., Mass., has made an improvement in bellows for melodeons and reed musical instruments. The improvement consists in constructing the bellows with two chambers and a pump, furnished with valves so arranged that, when they are set in operation, the air is exhausted from one chamber and condensed in the other. There is a communication between the two chambers through the reeds when the valves, upon which the keys operate, are opened by pressure; air is then forced through the reeds from the condenser, while at the same time it is, as it were, drawn throngh by the vacuum in the exhaust chamber, by which means the sounds are produced more rapidly, and the tone is better in every respect, than that produced in the common arrangements of bellows for such purposes. Measures have been taken to secure a patent.

Improvement in Sugar Moulds.

James Myers, of New York city, has taken measures to secure a patent for a valuable improvement in the construction of sugar moulds—it consists in lining the interior of the moulds with sheet zinc, and having the outside of iron, and rivetting both together. It has been attempted before to use moulds entirely of zinc, but they were not strong enough; this improvement makes a strong mould, and the sugar is prevented from coming in contact with the iron and oxydizing it. The discolorization of the sugar is thus prevented, and the frequent painting of the moulds dispensed with.

Improvement in Sawing Pulleys.

Israel F. Brown, of Columbus, Ga., has taken measures to secure a patent for an improvement for sawing pulleys, or discs, and for boring holes through them for the spindles. He employs a tub saw, and in combination therewith a clamp and auger. When the wood of the pulley is sawed out, by pressing the foot upon a lever the auger is set in operation, and is raised against the wood, operating on it to form the centre hole for the spindle.

Improvement in Wheels and Axles.

Daniel R. Rall, of the city of Rochester, N. Y., has taken measures to secure a patent for a new mode of attaching car wheels to axles; it consists in keying the wheel firmly on a tube or collar formed of two or more parts, said collar fitting in a recess around the shaft; by this means the axle is allowed to turn within the collar or tube, in cases of strain upon the axles and wheels, while turning curves.

Applegarth's New Printing Press.

Mr. Applegarth, the celebrated manufacturer of printing presses, in London, has taken out a patent for a new improvement in his printing press. It is different from Hoe's great press, inasmuch as the forms of type are placed on two separate cylinders, and the sheets are printed on both sides at one operation. It is a huge press; the type cylinders are 70 inches in circumference, and each cylinder has two sets of inking rollers. It can throw off 9,000 papers, fully printed in one hour.

Soap.

We have used the patent soap manufactured by Wm. McCord, whose advertisement appears in another column. For washing clothes, painted walls and wood-work, we believe it the best article in use. We do not hesitate to recommend it to the public.

STRAW CUTTER.---Fig. 1.

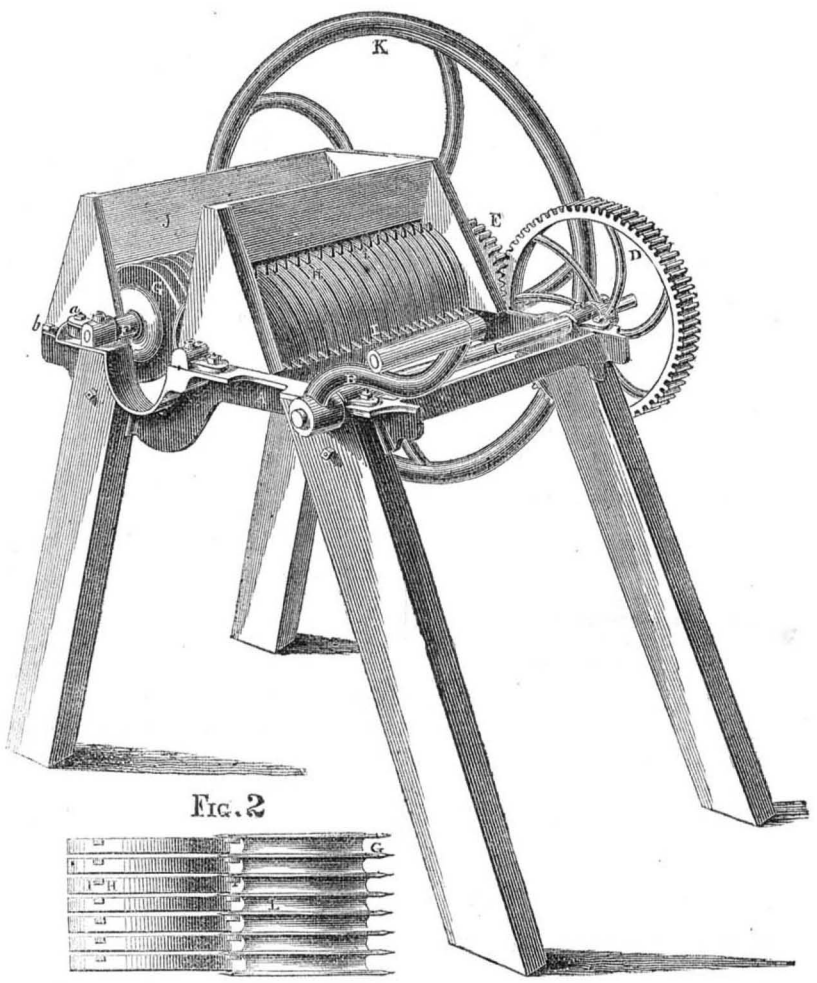


Fig. 2

The accompanying engravings are views of the patent Straw Cutter, invented by I. F. Browne, of Columbus, Ga.

Figure 1 is a perspective view, and figure 2 is a plan view of the feeders and cutters. The same letters refer to like parts. A represents the sides of the frame, B, is the crank handle to drive the shaft, C. D is the cog wheel, on shaft C; it gives motion to wheel, E, which drives the feeders, H. The wheel, E, meshes into a pinion of one half its size (not seen) on the shaft, F, which gives motion to the cutting circular knives, G. The feeders, H, are narrow faced wheels having three projections or fingers, I, on the periphery of each, to draw in the straw, &c., as the said wheels revolve. These wheels are secured on a shaft in such a manner as to leave a space between each, and to draw in the straw, &c., as the said wheels revolve, as shown in fig. 2. The knives are discs with bevelled edges, and are secured on a shaft with a solid metal pulley, L, between each pair, as shown in fig. 2. Both the knives and feed wheels revolve together, in opposite directions, yet towards one another, so as to cut the straw, &c., between them. The knives do not revolve against the wheels, but between the spaces, as represented in fig. 2. The knives have a double velocity to that of the feed wheels, which is advantageous in cutting tools when there is no fear of heating. This machine cannot choke up; the amount of cutting edge on the 19 knives, is thirty-seven and a half feet. As the knives do not act against anything but the straw, while cutting, they retain their edge for a long time. They are very easily sharpened; not one has to be taken out for this purpose; all that has to be done is simply to turn the machine, and hold a file against the side of each knife, at the proper bevel, until the edge of the knife is brought to the cutting standard. All the parts are made of cast metal except the knives, and all the parts can be fitted together in a few minutes by any farmer. There is no part liable to break, or go wrong. The bearing boxes of the shaft, F, of the cutting discs or knives, G, have a slot, *a*, which, by a screw, *b*, allows of the discs being set to work properly in the spaces between the feed wheels, H. All the parts of this machine can be made very strong, and as they are not liable to wear out or break, and as the knives are sharpened on the machine, in the simple manner described, it certainly embraces many admirable features. It also cuts very fast; of this we have had ocular demonstration. From the engravings and the foregoing description, we believe our farmers will fully understand the construction and operation of this machine; it acts upon the principle of a rotary shears. The machines are made by E. T. Taylor & Co., Columbus, Ga.; and E. T. Taylor, Thomas & Co., 125 Pearl street, N. Y.

A Hard Cement for Seams.

A very excellent cement for seams in the roofs of houses, or for any other exposed places, is made with white lead, dry white sand, and as much oil as will make it into the consistency of putty. This cement gets as hard as any stone in the course of a few weeks. The lead forms a kind of flux with the sand; it is excellent for filling up cracks in exposed parts of brick buildings; it is also a good cement for pointing up the base of chimneys, where they project through the roofs of shingled houses. We have made this cement and tried it, and speak about it from experience only, for we have no knowledge of it ever having been described in any work.

Another Good Cement.—Use the above, only employ half whiting and half sand; there should be about four parts of sand and whiting, by weight, to one of lead.

Another Cement—Take and dissolve some alum in a vessel containing water, and while it is in a boiling state, cut up common brown soap into small pieces, and boil it along with the alum for about fifteen minutes. One pound of alum is sufficient for five pounds of soap. The soap becomes sticky, like shoemakers' wax, and can be drawn out in a similar manner. It is now to be mixed with whiting to a proper consistency for filling up seams, &c. It becomes partially hard after a few months, and adheres to wood very tenaciously. It is not easy to put on, and if there be any moisture in the wood it cannot be made to adhere at all. When dry, it is impervious to, and repels water; it is slightly elastic, and has advantages in this respect. To make it adhere it must be well pressed down. This cement, like the preceding two kinds, is the result of experiments; we have tried it, and speak with confidence of its qualities. For the filling up of seams, in parts of wooden buildings exposed to the weather, there can be no doubt of its good qualities, and it is not expensive. A putty made with whiting and linseed oil, in the common way, if mixed with some white lead, about one-tenth part by weight, we like better than any other cement we ever tried for cracks or seams in wooden buildings, to be applied outside, but it is not elastic like the cement made with soap and alum.

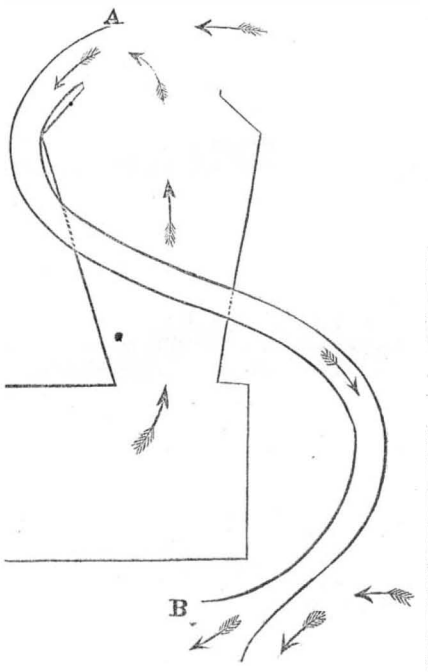
Our readers will be able to choose for themselves which of these cements, if they require any of them, is best adapted for their peculiar purposes.

Novel and Useful Work.

A. D. Bishop, Esq., the inventor of the Patent Floating Derrick, has been operating, says the Detroit Free Press, upon the steamer Keystone State in a most successful and novel manner. We are not in command of the necessary technical words, to convey an accurate idea of his ingenious plan of repairing vessels without the delay and expense of the dry-dock. We can best give our own ideas of Mr. Bishop's system of operating by calling in aid the language of another profession, and that is simply "cupping" the ship. Desiring to operate as low down as the keel, he boxes over the part, and attaches canvas to the ship and the projecting sides of the box, and having thus partitioned off a given portion of the ship, pumps out the water, and secures working access to it.

Smoke Syphon for Locomotives.

Messrs. Editors—I herewith send you a diagram explanatory of the "Smoke Syphon." You will perceive that it differs both in principle and action from Dr. Townsend's tube or pipe arrangement. The onward motion of the engine presses, under high velocities, the smoke and gases abruptly over the top of the smoke stack, and they are received in the mouth of the syphon, at A. The passing currents of air which are deflected from the foot of the syphon, at B, create a powerful downward draught, bringing the smoke and gases



under the train. The smoke is less obnoxious to passengers than the gases, which, the moment that they part with their heat, fall on and around the train, and are drawn into the car through the injectors and doors. The use of coke as fuel would remedy the evil of smoke, but the gases and ash smut would still remain to be disposed of. Freeing the cars from dust is but a minor feature in my system of ventilation. A free supply of pure air, both in winter and summer, in wet or dry weather, being more important to health and comfort. The sodding and sprinkling of roads may save wear of machinery, but in no case can it improve the comforts of travelling.

Yours, Henry M. Paine.

New York, July 28, 1852.

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Scientific American

NEW-YORK, AUGUST 7, 1852.

Hecker's Self-Raising Flour.

In some of our recent issues we have called attention to this article, the subject being important in itself, but more especially as the Self-Raising Flour manufactured by Hecker & Brother, at their Croton Mills, seems likely to become of very general use. In our paper of the 22nd May last, we threw out some suggestions touching the existence of a patent, and the ingredients which might or might not be sately used for the purpose of lightening bread. Under what patent the Heckers manufactured this flour, and what those ingredients were, we had not then been advised. Hence our desire to furnish the public with such explanations as we could obtain or give on the subject.

It will be remembered that we had not then examined or used this flour, and were not, therefore, prepared either by experience or experiment, to express any opinion as to its merits.

But our purpose was to obtain information as well for our own satisfaction as for the protection of the public.

The recent use of this "Self-Raising Flour" in our family, and a deliberate examination of the subject, have satisfied us, beyond all question, that it is a most desirable article, not merely for the convenience of the thing—an important consideration certainly—but especially because the best bread, biscuit, &c., it has been our good fortune to meet with, are thus produced. Indeed, it seems to us that no good housekeeper, after having used this flour, would willingly fall back upon the old and less perfect method of fermentation in the preparation of bread.

While we are thus enabled to assert our decided preference for the patented flour, above the common flour, and for this improved mode of lightening bread over the old methods, we deem it to be our duty to caution the public against spurious imitations of it, which we perceive that eminent Professor of Analytical Chemistry, at Rutger's College, N. J., Dr. L. C. Beck, whose letter is before us, suggests the probability, for, like all articles of superior utility and value, this will doubtless have its counterfeits. The slightest care will suffice to detect the spurious article, without even an examination of its quality, for the "Self-Raising Flour" has the brand "Patent" as well as the address of Hecker & Bro., upon the barrel, bag, or package, which, we presume, no one will be daring enough to forge.

We were much struck with the small quantity of raising ingredients used in the manufacture of the patent flour, and with their result in the bread. This we find to arise from their minute and thorough incorporation with the flour, which must result from the use of very improved, perfect, and powerful machinery; and such evidently is the machinery used by the Heckers in this process. Hence the same quantity of ingredients unskilfully used, as in the case of families attempting their mixture with flour, would be wholly ineffective, besides the chances that the ingredients would be inferior or adulterated, and the proportions inaccurate, and, consequently, failing in the important point of neutralizing each other.

We have already sufficiently disavowed the statements contained in the communication of H. A. Smith, which, owing to inattention, found its way into our paper of the fifth of June last. If that correspondent referred to the "Self-Raising Flour" manufactured by the Heckers, he was laboring under an entire mistake, or must have been actuated by improper motives. But we must add that the apprehension that we might have done Hecker & Brother injustice, in being the means of bringing that letter before the public, led us to give so much attention to this subject, and that, finally, we felt it to be our duty to call upon Mr. Smith for an explanation. In that interview he agreed to sign a paper to be prepared by us, retracting what he had said prejudicial to this flour. Such a retraction we had hoped, ere this, to have obtained and published.

We may, however, advert to this subject again, hereafter. The Messrs. Hecker & Bro. have prosecuted improvements in their departments of business with such devotion and ability, that nothing could be more foreign to our wishes than to throw any impediment in their way. Being themselves men of science, and thus and otherwise possessing peculiar advantages, they have made great progress in the improved manufacture of flour, farina, &c. Hence it was, that at the World's Fair, where the genius, skill, and industry of all lands met in fierce competition, and where our productions, at first, were deemed inferior, it was found that Hecker & Brother had produced, from their Croton Mills in this city, *the best Genesee Flour in the world.* It would gratify our national pride less if we could have competed with the Englishman in the fine polish of cutlery—with the Frenchman in work of exquisite taste and beauty—with the dusky weavers of the East in the creation of their finest tissues; or if we could have exhibited the greatest diamond extant, than to have thus triumphed in respect to this great staple—the staff of life. We owe a debt of respect and gratitude to men who have thus, in high places, against strong prejudices, and after unprecedented criticism, vindicated the American name. If it could be once asked, "Who has read an American book?" no one can hereafter affect to question our success in this branch of our manufactures.

Steamboat Racing.

The steamboat "Henry Clay" took fire on Thursday, last week, about 12 miles from this city, while coming from Albany, and, sad to relate, no less than seventy persons lost their lives. The way in which the accident happened was this: the Henry Clay and the Armenia, opposition boats, left Albany together, and raced nearly the whole way; the Henry Clay passed the Armenia, and was ahead of her, about two and a half miles below Yonkers, when she was discovered to be on fire in the boiler room; the pilot immediately turned her head towards the shore, and ran her full force against the bank, with her bow foremost and stern in deep water. The passengers who lost their lives were on the after part of the vessel, and all communication with the bow was cut off by the fire. She was in full flames in three minutes, and the lost were drowned by throwing themselves into the water. It was a terrific scene, and the calamity has created a greater sensation among our citizens than any event which has occurred here in six years. If the pilot had laid her alongside the shore, probably all on board would have been saved, but the stern being left in deep water, and the majority being women and children, they crowded upon one another, and being helpless to save themselves, found a watery grave.

The direct cause of the accident was the criminal recklessness of the officers in racing—there can be no doubt of this. The fire originated in the boiler room, where the heat was so intense, during the race, that persons could scarcely approach it. Meetings have been held in this city to pursue those who have been the direct cause of this accident but nothing—no, nothing, will be done to them, we believe, by way of punishment. The lips of justice appear to be sealed with the blood of our fellow citizens; no *respectable* person is punished in our country for criminal recklessness in sending fathers, mothers, sisters, brothers, and children into eternity, by burnings, explosions, nor anything else. It is high time that something were done, and done promptly and effectually to wipe out the foul blot of steamboat and railroad murders from the escutcheon of our country.

Potts' Process for Forming Piers and Embankments.

Two weeks ago, on page 355, we made a few remarks about Dr. Potts' process for sinking hollow iron piles. Since then Mr. Pontez, the owner of the American patent has called upon us; he had just arrived from Charleston, S. C. He has been sinking piles for a railroad bridge over the Pee Dee river, and the foundations for a lighthouse in Baltimore are being perfected upon the same prinple. In the course of a few weeks we will have something more to say upon this new system of engineering, and will perhaps be able to illustrate some very important improvements made by Mr. Pontez, in the application of the building of docks, something much wanted in the city of New York.

Science---Its Truths and Falsehoods.

It is no doubt true, that certain theories have been looked upon as science in one age, which have been set aside, and have given place to other opinions in another age; there is a philosophy "falsely so called," but truth never changes—it is immutable, and knowledge is but truth, therefore scientific knowledge must be true, unalterable, and unchangable. New discoveries cannot alter old truths—they are eternal. The grand object of reason—that for which it was given to man, is truth, to search after it—"to prove all things and hold fast that which is good." The danger of science, is the acceptance and maintaining of views which are not the truths, but the falsehoods of science—the wolves in sheep's clothing. This was the case with the old philosophers, who opposed Galileo, because they believed, without sufficient proofs, in the theory of Ptolemy. It is not right, however, to embrace every new alleged discovery, merely because it is new, if opposed to some old one, because some old theories have been weighed in the balance and found wanting. Facts themselves never grow old, and they never can be supplanted; thus there has been a continual round of night and day ever since our planet commenced its flight in space, but the causes whereby night and day are produced have not always been understood. Whenever a cause, however, is discovered, we apprehend that our knowledge can go no further—it is then fast as the everlasting hills. The difference between the scientific and the non-scientific man consists in this, the former has embraced and is acquainted with the facts relating to science; the other is perfectly ignorant of those facts, or has embraced falsehoods instead of facts, just like a man who has accepted the perversions instead of the facts of history.

It is a dangerous thing for the community when ignorant, egotistical men can and do flame their falsehoods of science abroad, perverting and deceiving the silly-minded with their very audaciousness. There have been blind leaders of the blind, in all ages, and there are plenty of such characters in our own day and country, but if ever there was a period in the history of this world when ignorance was inexcusable, it is the present, and yet it is truly surprising to see what a number of profoundly ignorant men there are in the world, usurping conspicuous positions, and boldly confronting truth with falsehood.—There are plenty of men whose babblings and dwaddlings of science—whose loud voices and small brains—whose vague and sounding nonsense, appear to be the very qualifications which some people suppose should belong to philosophers. They have the faculty of saying things which they neither understand themselves, nor any body else, and this, by some, is held to be science—philosophy and profundity of thought. If undefined cogitations, and unrefined disquisitions, as portentous of results as the idiot's dream, be philosophy, then they are philosophers.

In a number of cases we have exposed the cant and rant of such fellows—such pretenders to scientific knowledge, and we shall have to do so frequently. We perceive that the centrifugal force question is being discussed again by some of our cotemporaries; another California balloon is soon to leave Washington for the land of gold; another electric light may soon start up in the East, West, North, or South, and then for another furious excitement about wonderful discoveries, and so on. On page 380 Vol. 6, Scientific American, we stated that, in twelve months from that date, the public would thank us for the exposure we made of the Centrifugal Force humbug. The twelvemonth has now elapsed, and we ask our friends, if all that we said respecting that machine has not come to pass? The whole affair is now exhibited to be putrid with imposition. It is to the disgrace of our city and country that there are men who sit in high places, pretenders to scientific lore, who could not tell whether the centrifugal theory were right or not.

When we exposed the rottenness of the centrifugal force theory, we were abused through the columns of the New York Tribune, and a number of trashy papers in this city, but the truths of science are eternal, and we trusted to time to nail the centrifugal falsehoods of science, as was Sisera, to the ground. It has been done; not a solitary machine to bring centrifugal force out of nothing—costing nothing—has yet been constructed and never will be; the miserable imposition, and the more miserable and audacious promoters of it have sunk into their proper places. True science has triumphed; some high pretenders to knowledge and science were tried by that touchstone of mechanical philosophy, and their small amount of true learning is now appreciated,—they, too, will yet sink into their proper places.

The Universe and Man.

This earth might have been made a wild dreary waste, without beauty or grandeur to cheer the heart of man; but the evidences on every hand prove conclusively that the universe and man, as man is constituted, have been formed by the same Almighty Creator, with all their laws in harmony, to promote the happiness of intelligent creatures. The stars, when they come out at night in the blue heavens, with their millions of flaming torches, to light up the mighty dome above, impress the heart of man with feelings of wonder and admiration. The sublime mountain, the roaring cataract, the rustling breeze, the forest with its singing leaves, the songs of warblers in the groves, the purling rills, the grassy meadows, the flower's perfume, yea, the black thunder cloud, as well as the calm sunshine, were all made for man, for his pleasure, his happiness, his immortal glory. The very cold of the arctic and antartic regions—those vast solitudes of ice and snow,—were made for the benefit of man; the sun looks down upon the oceans of the tropics, the clouds and vapors rise, the cold currents from the North and South—"the wind, in its circuits," as Lieut. Maury says, "rush in to fill up the vacuum below, while the hot winds fly away to the North, and fall down in gentle showers, refreshing the thirsty ground." The winds thus formed, and the vapors thus carried, bring health to the cheek, and abundance to the fields. The mountains are also nature's reservoirs; they husband up the snows and rains, to pour them down again in silver streams and rolling rivers, to irrigate the soil, or transport the inland commerce of a continent to the broad ocean; and the oceans themselves, their wide expanse of waters—their ever-restless beatings on wild shores—were all made for the benefit of man. Without such an expanse of ocean covering two-thirds of the surface of our globe, lands now blooming with verdure and beauty, would be nothing but dreary sandy wastes. The winds carry our ships from shore to shore,—they keep the deep from stagnant putridity, and their very voices have a charm, when deep calleth to deep; "there is beauty on ocean's vast verdureless plains, when lashed into fury, or lulled into calm."

The summer clouds, as they stand and move, red and grand against the setting sun, when they rise like Alp upon Alp, or castle upon castle, with flaunting banners and gleaming lightning behind them, like the far flashing of artillery, impress every heart with feelings which tell us that these things were made for the delight, the admiration, and benefit of intelligent beings. The very curves of mountain ranges, hills, and winding rivers—those bounding lines of beauty, were made for some important purpose,—they harmonize with those laws or endowments—call them what we will—which are enstamped upon the heart of man; in the language of John C. Price, "there is beauty and music o'er all this delectable world,"—and so there is, but man often tramples those beauties and delights beneath his feet, in the same way that the profligate treads recklessly upon virtue. He who would enjoy the beauties of nature, must, like the Patriarch Isaac of old, often go out to muse at the evening hour, and "look from nature up to nature's God."

Dr. Hubbil, in the Ecclectic Journal of Medicine, states that a decoction of cleavers (galum aparine), if applied to the face, and infusions of it drank, removes freckles from the skin.

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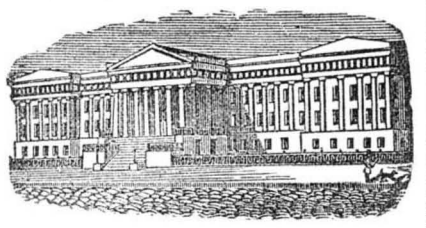

Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JULY ,27 1852.

PREPARING ZINC FROM THE ORES—By Henry W. Adams, of New York City : I claim the process of manufacturing metallic zinc in a state of impalpable powder, by the cooling agency of steam, substantially in the manner set forth.

MACHINES FOR FORMING BUTTON BACKS—By J. C. Cooke, of Waterbury, Ct.: I claim the jointed clamps and the tongue, to form the eye, when combined with the slide, with its stationary and movable jaws, when the movable jaw and slide are worked by a jointed lever, to feed the wire, when they are constructed and made to operate substantially as described.

I also claim the die for punching and forming the button back, composed of the punch and bed, when combined with the slide and feeding cylinder, when constructed and operated substantially as described.

I also claim the jointed fingers for receiving the formed and punched back and conveying it to, and placing it on the eye, when combined with the setting or rivetting punch, when they are constructed, combined, and arranged, and made to operate substantially as described.

SAWS FOR SAWING STONE—By Albert Eames, of Springfield, Mass : I claim in the making of blades for cutting stones, the employment of lead, or its equivalent, between and in combination with the hard metal sides, substantially as specified.

CHURN AND BUTTER WORK—By O. R. Fyler, of Brattleboro', Vt.: I claim, first, the combination, in a cylindrical or tub churn, of floats or paddles, attached to a revolving axis, with stationary posts, standing near the axis of the churn, combined and operating in the manner and for the purpose specified.

Second, the combination of dashers, or paddles, broad at their ends, with posts small at each end, and large in their middle portions, combined and operating in the manner and for the purpose specified.

FASTENINGS FOR HARNESS—By Thomas Henderson, of Hartford Co., Md. : I do not claim, in general terms, the use of a crooked lever and ring, for these have been applied before to this purpose; but I claim the use of the peculiar kind of crooked lever, or hook, described above, in which the fulcrum and centre of motion are at the short end, and the point of resistance at the curve, and in a straight line with the fulcrum and other end, thereby effecting the desired object within itself, and without the combined aid of plate, spring, rivet, or other fixture, whether the same be applied to the fastening of hames, as described above, or to connecting the ends of chains, as in the case of the chains usually fastened across the middle of wagon bodies, or to any similar purpose.

DUPLEX ESCAPEMENTS—By Charles E. Jacot, of New York City: I claim the construction and arrangement of the escapement wheel, with the points and pins, to take the arm on the balance axis, the whole being constructed and operating substantially as described.

SEED PLANTERS—By Adam Kraber, of York, Pa.: I claim the combination of a series of stationary combs, secured to the bottom of the hopper, near the orifice through which the grain is discharged. with a corresponding series of rotating teeth, secured to a cylinder roller that revolves within the hopper, in the manner and for the purposes set forth.

I also claim the combination of the cross bar and its links and levers, with the draught bars of the shares, whereby the whole series of shares can, at will, be raised and depressed, while the machine is in motion, and the weight of the whole machine is brought to bear upon any tooth that may tend to run out, in consequence of meeting with hard soil, while, at the same time, an even depth of furrow is maintained by the wheels, and the weight of the frame taken off the shares, except when some one of them tends to run out, as set forth, but I make no claim to any arrangement of mechanism for holding the teeth or shares in the ground, when the pressing bar acts upon the teeth through the medium of springs.

SOAPS—By Wm. McCord, of New York City : I am well aware that "Fullers' Earth" has been used for a soap, from time immemorial, also of various clays having been used for detergent purposes.

I am also aware that ammonia has been employed in soap, and a patent has been issued, in which it forms one of the ingredients, but in all cases, so far as I have seen it used, it has never been held in good combination with the other ingredients in the soap, but has, owing to its volatile nature, soon evaporated.

As combined with the clay, by my process, the ammonia is retained in the soap, and does not evaporate. I therefore claim the combination of ammonia, or carbonate of ammonia, with kaolin, or other equivalent aluminous minerals, in the composition of a soap, substantially as set forth.

RAILROAD TRACK CLEARER—Simeon Minkler, of Chazy, N. Y :—I do not claim the grapples which are attached to the engine, car, or carriage and embrace the top flange of the rail; but I claim keeping the said grapples closed upon the flange of the rail, by the collar, which drops over their joints and opening the same by chains, or their equivalents, attached to the said collar and to the grapples, under the control of a person on the engine, car, or carriage, said chains, or equivalents, lifting the collar, so as to leave the grapples free, and then opening them, substantially as set forth.

BLOCK FOR STRETCHING COATS—By S. M. Perkins, of Springfield, Pa : I claim the use of the seamless coat stretcher, made in two halves, and jointed together by hinges at their back edges, and having permanent or adjustable arms attached thereto, and hooks for holding the edges of the cloth while stretching, spring hook, or ketch and pin, for holding the halves of the machine together, and steadying pins in the face of the two halves, in combination therewith, substantially as set forth.

RAILROAD CAR SEATS—By S. M Perry, of New York City: I claim to so combine the back with the two end frames by means of bars jointed to it, one or two studs, and one or two series of notches, or equivalents therefor, that the said back, (when not a reversable one) may be raised and inclined in various positions, so as to not only support the back, but the head of a person at the same time.

And I claim making the back reversable, by means of two series of notches, &c., and two sets of studs, or equivalents, the same being arranged on opposite sides of the chair, and made to operate as specified.

And in combination with the back, made to raise and be inclined, by contrivances substantially as specified,

I claim the improvement of making each bar with a rack or racks of teeth, or succession of notches. to be set on the pin, or in manner and for the purpose as specified.

MORTISING MACHINES—By W. C. Shaw, of Madison, Ind.: I claim the method I employ or turning the mandrel that contains the mortising chisel, by means of the collar on the mandrel, springs, ketches, shifting piece, friction rings, and pinion, all in combination, for the purpose set forth in the foregoing specification.

LAMPS—By Chas. Siedhof of Lancaster, Mass.: I claim the open slide tube, as combined with the supply reservoir of a lamp, constructed and made to operate substantially as described, the object of such tube being not only to maintain the oil at a constant level around the wick, but to enable a person to regulate the height of such level at pleasure.

GRADUATED CUTTERS FOR CLOTH AND OTHER SUBSTANCES—By H. D. Walcott, of Boston, Mass.: I claim the employment of a cutter and bed, or their equivalents, made adjustable in relation to each other, in the direction of the cutting edge, for the purpose of varying the length of the cut, substantially as described.

COMPOUNDS FOR UNITING STEEL AND IRON—By B. C. Leavitt (assignor to J. S. Bishop & R. H. Libbey), of Newport, Me.: I do not claim the use of crude borax, either pulverized or not, for the union of metals, as this has been used for the purpose by others; but it does not insure a perfect union, and cannot be relied upon, with any degree of certainty, and great loss of time and materials often occur, as well as a ready separation of the two, even after a seeming union, and the particular work seems complete and ready for the use intended; but I claim the mode and manner of calcining and preparing the crude borax, and compounding the same afterwards, with the carbonate of ammonia. and in the proportions set forth and described, and the mode of applying or using it, or any other, substantially the same, and which will produce the intended effect.

BROOMS—By Cyrus T. Moore (assignor to Friend S Noyes), of Concord, N. H.: I claim, first, securing the material of the broom, by means of a clasp, having its jaws hinged at the extremities, and fastened together at the socket, or some equivalent device, substantially as set forth.

Second, A spring or springs, whether placed, as described, inside of the brush or material composing the broom, or otherwise, so as to operate in substantially the same manner.

Third, the cross fastened to the spring with spurs, or otherwise, in combination with the loop, to hold the brush or other material, in its proper place, as described.

DESIGNS.

FRONT AND SIDE PLATES OF A COOKING STOVE—I claim the new design, consisting of the mouldings, spear heads, and stars, with rosettes, as described and represented, for the front and side plates of a cooking stove.

MEDALLION OF DANIEL WEBSTER—By Peter Stephenson, of Boston, Mass.

Woodworth Patent.

Report of the Committee of Patents, H. R. Mr. Cartter, Chairman, July 17th, 1852 :—

The application of the memoralist is a renewal of a former unsuccessful attempt to obtain from Congress the grant of an extended term of the patent for the Woodworth planing machine, from 1856 to 1870. The committee have given to the subject a degree of care and attention commensurate with its importance; and the result of a thorough and impartial investigation has been to bring them to the conclusion that a further extension of the term would be an act of injustice to the country, and involve a direct departure from the settled policy of the government.

The facts developed in the course of this investigation are worthy of the attention of Congress, and are strongly commended to their consideration by their unanimity of public sentiment in every section of the Union against the proposed extension. The States in which the abuses under the last extension have been most marked and bold have spoken through their official organs. Strong and earnest remonstrances have been presented to Congress from members of each branch of the legislature in the States of Ohio and Massachusetts. Concurrent resolutions against the extension of the term, and against the sanction by Congress of the re-issued patent, have been adopted by the legislatures of Maine, New York, and Pennsylvania. Numerous public bodies and tens of thousands of citizens have transmitted from every section of the confederacy their remonstrances against further congressional grants to the owners of the Woodworth patent.

The petitioners for the extension, so far as the committee have been able to ascertain, seem to be for the most part those who, from their connection with grantees of rights under the patent, are benefitted directly and indirectly to an extent sufficient to overbalance their share in the general burden imposed on the community. The parties by whom it is opposed seem to be those connected with the great lumber interests of the country, the builders, the mechanics, and the great mass of citizens who are compelled to pay an enormous tribute upon an article in universal use.

The extension is applied for on the ground of merit in the invention, entitling the administrator to further Congressional bounty. It would seem from the memorial and other papers submitted, that if the applicant's statement is to be relied on, he and his father had received six years ago, only from a quarter to half a million of dollars by way of remuneration for the invention. The extension is opposed by the remonstrants on the following among other grounds :—That the merit of the invention has been greatly exaggerated; that for the first few years, as shown by the affidavits filed by William W. Woodworth to obtain the first extension, the machine was a practical failure; that a successful planing machine was invented and patented by Uri Emmons; and that Woodworth succeeded by subsequently incorporating Emmons' invention with his own, some years after the date of his patent; that an extension of Woodworth's term for seven years was obtained from the patent office in 1842, three years after the death of the patentee; that the application was made by William W. Woodworth, administrator, in his own name, but in pursuance of a previous written agreement between him and James G. Wilson, a private speculator, by which they were to share in the profits of the extension; that the grant was obtained in contravention of the general law by false suggestions, and the suppression of material facts, and by withholding, instead of submitting as required by the act, a statement of "receipts and expenditures sufficiently in detail to exhibit a true and faithful account of loss and profit in any manner accruing to him from and by reason of such invention;" that various sales to the amount of over $12,000, made by Wm. W. Woodworth himself, within seven months before his application for the extension, and disclosed by the record of the conveyances were omitted in his sworn account; and that the extension was made upon statements which could have no other effect than to deceive the officers of the government who were to act upon the application; that nearly five years before the expiration of the first extended term, and long before it could be ascertained that any further extension would be necessary to remunerate the administrator for the merit of his father's invention, an application was prematurely pressed upon Congress, and hurried through without discussion in such a manner as not to attract the attention of the country; that this extraordinary grant was obtained without a sworn account of profits, which is uniformly required under the general law even upon a first extension; that the memorial on which the grant was obtained was so framed as to withhold from Congress material facts, and to create false impressions as to the merits of the application; that by these means an extension was obtained in 1845, running forward from 1849 to 1856; that within three weeks afterward, and more than four years before the commencement of the new term, the administrator sold all his rights under the extension, except in the city of New York, for fifty thousand dollars, as admitted by Woodworth himself, or for one hundred thousand dollars as proved before the Senate committee of the last Congress; that within four months after this pretended sale, Woodworth professed to surrender up the old patent, and obtained a re-issue, entirely changing the character of the patent, the nature of its claims, and the subject matter of the previous grant by Congress; that this re-issued patent has been used as a weapon of offence from that time forward, to strike down all other inventions in this department of industry, to oppress the previous licensees of the Woodworth patent, to block up the courts of the United States with harassing and relentless litigation, to force down all competition, and to increase the enormous amount of tribute before exacted from the country, upon an article of daily use and indispensable necessity; that the prices are kept at the very verge of the cost of dressing lumber with the hand plane; that the owners of the different Woodworth machines are prohibited by mutual covenants from reducing prices or competing even with each other; that the cost of dressing lumber with the Woodworth machine is less than two dollars per thousand feet; that the prices exacted from the public generally range from five dollars to seven dollars and fifty cents per thousand; that the cost of doing far better work in the superior machines of more modern inventors is less than one dollar per thousand; that the memoralist seeks to exclude the public from the use of those machines, under the expanded claim of the re-issued patent; that according to Woodworth's own showing, the public are paying to the proprietors and licensees of this patent over $15,000,000 a year for dressing lumber; that more than $9,000,000 of this is clear profit and tribute money; that the same work could be better done by the machines of the present day, constructed by other inventors, for less than $3,000,000 a year; that the public has repaid the debt to Woodworth a thousand-fold in enduring these exactions for a term of twenty-eight years; and that the administrator has no such a claim upon the country, as to entitle him to demand that it should submit, for the benefit of one man and his grantees, to the continuance of a tribute of $9,000,000 per annum until the year 1870.

Upon these issues the question is to be determined by Congress between the claimant and the country. The committee have spared no pains in investigating the records, and the voluminons mass of papers and documents which have been submitted to their consideration, in support of and in opposition to the claim; and whether they regard the whole collectively, or those only presented on the part of the memorialist, they are led irresistibly to the conclusion that the application ought not to be granted. The ordinary presumption is, that an invention of practical utility will afford an ample remuneration to the inventor within the term of fourteen years, for which he enjoys the exclusive right under the general law. In extraordinary cases provision is made for an extension of the term to twenty-one years. The invention then becomes public property by the condition of the grant—by the terms of the contract between the patentee and the government. The case should be of an extraordinary character in which the rights of the public are divested for a second term, and the duration of a monopoly prolonged by an act of special legislation. But the case must be still more extraordinary in which Congress is invoked to grant a third extension for a term equal to that of the original patent, thus reaching forward to a second generation, and depriving them of the benefit not only of the patented machine, but of all subsequent inventions which, by refinement of judicial construction, quickened by the ramitying interests of a profitable monopoly, may be brought within any of the changing phases which ambiguous language may be made to assume for the purpose of expanding the claim of a patentee. If an isolated instance can be found in the whole history of the government of the grant of a third extension, it stands in connection with its unfortunate effects, and the just occasion it has given for complaint and animadversion, rather as a beacon to warn us against improvident private grants, than as a precedent for Congressional action in future legislation.

[To be Continued.]

New Mode of Setting Window Lights.

The plan for setting window lights, described below, is calculated to influence materially the price of putty. The window-sash is made entirely of wood, the outside permanent. The inside is framed in such a manner that the parts can be readily removed, for the purpose of inserting the glass, which is placed between strips of India rubber, which, when the parts of the sash are replaced, causes the glass to be perfectly firm. The movable parts of the sash are secured to their place by a knob-screw which makes a pretty finish.—The advantages of this method of setting glass must be obvious upon a moment's reflection.

[We have seen the above in a number of our exchanges, and know nothing more about it; the improvement appears to be reasonable, but more expensive than the old way.

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TO CORRESPONDENTS.

L. M. C., of C. W.—A steam pump of the description you speak of, and with its qualities, is desirable but the only true test of its effective economy is experiment. It is not possible to tell how it will work without a trial, for that would be predicating a result upon an unknown theory.

J. A. D., of Fla.—We cannot consent to do any such thing, we have learned the folly of believing that such advice is rendered from disinterested motives.

A. B. K., of Canada—We can find only one patent issued to A. N. Henderson; but it is for a different purpose. There are numerous patents in this country for setting logs, called "self-setting," and we presume some are in use. We have heard of no demand for such inventions of late. The extra charge on the "Sci. Am." is for Canada postage.

S. H., of Mass.—As soon as a final determination is made in your case we shall advise you. No alterations can now be made in the model under the same fee. If you wish to alter it, the present case must be withdrawn and a new application filed in.

M. R., of Me.—You have entirely overlooked one fact, that is, "velocity;" surface pressure is not the only calculation to be made; the velocity and pressure must enter into computation. The same principle as yours was embraced in the Air Engine of Savery. The low pressure condensing engine meets more than the conditions set forth in your sketch. We shall let you have something on steam power in a future number.

C. B., of Ohio—The method you suggest for ventilating railroad cars has been before proposed; we doubt its patentability, as substantially the same plan has been secured to a Mr. Heckrote, of Maryland.

P. S, of N.B.—There are no patents in the name Hargus or Kendal, for candle making. We presume they have no patents for their processes.

M. W. S., of Mass.—The keeping of the stone wet is not the difficulty at all, nor was that mentioned to be the difficulty, for it would not answer to keep the stone always wet; the ink, in that case, as you see, could not be applied.

W. R., of R. I.—The engravings of your patent door will be inserted in our next number.

J. T. P., of Mass.—Your papers have been forwarded to the Patent Office, and you may look for the issue in about two months.

H. W. C., of Mass.—Your diagrams are in the hands of the engraver, and will be done this week.

S. L., of Maine.—To build a vault cheap and fireproof, make the walls of rough stone, plastered with fire-proof cement, and make the roof of iron, with Hyatt's lights. It can be built cheaper, but not truly fire-proof. Wood can be rendered partially fireproof by steeping it in alum.

W P., of Mich.—The centrifugal force of the earth does not affect the waters of any river, any more than the motion of the earth on its axis affects the motion of our bodies. We do not see any good or useful result to be obtained from the discussion of the Mississippi question; its waters run down an inclined plane, in the common-sense view of the question.

M. K., of Mass.—Your ideas about ventilating cars is not new; the same proposition is advanced in the notice of Law's invention found on page 340, this volume Sci. Am.; it has often been submitted as the best plan for the purpose. The numbers we have sent, with the exception of an index of Vol. 2, none was ever published.

C. W. G., of Mass.—We have now a drawing in our possession embracing the same device for ventilating cars, as is proposed by you. It could not be patented.

Mechanics' Institute, Ohio—A railroad car brake, under the entire control of the engineer, and operated upon by steam, was projected some years ago by Robert Stephenson, of England. Several different plans have been proposed since his invention, but none of them have put into use. There are some practical difficulties in its way at present, it would seem.

J. H., of Ohio—The subject of car ventilation is now attracting much attention, and it is likely some good may result from it. For the benefit of yourself and many others, we deem it proper to state that trunks with bell-mouths, for taking in air, and wind tubes passing over or under trains, to receive air, either by a funnel-shaped mouth or by the application of a blower, are old and well known. We see nothing new in yours, in fact it will not work well, because dust and smoke will get in. Hamilton's and Paine's arrangements of windows embrace the principle designated by you.

V. P. K., of N. Y.—Wherein do you gain anything over the plan represented by Mr. Paine? The idea appears to be similar. He says his plan works well practically.

J. W. Stuart, of Plattville, Wis., wishes information in regard to presses and grinders for manufacturing linseed oil. We are unable to answer his inquiries; perhaps some of our readers may.

D. M. D, of Pa.—We should think your plan a good one, and we request you to send us a small model and description of it.

J. F. H., of N. Y.—The law will allow you to take a patent for your own invention, because none but the original inventor can make application. We think the mode of tempering springs is generally understood. Ballooning is of doubtful importance as a means of conveyance. Many have pursued the same train of reasoning with yourself.

H. J., of Pa—We are engaged in the examination of the invention, and will soon report to you.

G. H., of Albany—In 1782, the Marquis De Joffrie, constructed a steamboat at Lyons, France, and employed paddles on an endless chain. It was not successful. In 1826, this invention was revived by a Mr. Palmer, of the Royal Mint. The invention is old and well known, and has been condemned for some cause. We cannot enumerate the number of times this invention has been submitted to us. A proposition to use it on our canals was made three years ago, but without success.

E. C. H., of Ohio—We have examined your improved File for Documents, and think it new. We have never seen anything of the kind before, and regard it as useful. Whether the Office would issue a patent for it is more than we can say; we think a patent should be granted.

H. & R, of N. H.—If you wish an engraving published, please send by express the Letters Patent, and when we get through with them, they will be returned.

E. G. F., of Halifax—We regret that we are unable to furnish the information pesired by Mr. Potts, and know of no person to whom we can refer him.

W. C., of Me.—A patent was issued on the 19th of August last for a Register for omnibus drivers; you will find the claim on page 398 Vol. 6, Sci. Am.

D. B., of N. J.—So far as the passing of the heated products into the boiler is concerned, we have to say, that the plan has been proposed to us before, but there are practical difficulties in the way of its application. The heated products is carbonic acid gas, and the pressure of this gas must always exceed the pressnre in the boiler. We also do not see how you will be able to make the fire draw when the water becomes as hot as the product which heats it.

Money received on account of Patent Office business for the week ending Saturday, July 31:

L. P. & W. F. D., of N. Y., $10; A. H., of S. C., $25; C. B, of N. Y., $30; C. P., of N. Y., $20; E. S., Jr., of Ct., $20; M. J., of N. Y., $30; W. N. C., of N. Y., $30; J. T. & Sons, of N. Y., $600: H. W., of Vt, $10; B & B., of Ct., $22; J. F. W., of Ct., $50; I. T. P., of Mass., $25; J. D., of N. Y, $20; I. F. B., of Ga., $65; C. & B., of N. Y., $20.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, July 31:

E. S., Jr., of Ct.; C.P., of N. Y.; M. R., of Me.; J. D., of N. Y.; J. W., of Pa.; B. & B., of Ct.

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In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:

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Persons desiring the claims of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office;—stating the name of the patentee, and enclosing one dollar as fee for copying.

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128 Fulton street, New York.

TO BRIDGE BUILDERS—WANTED, an experienced Bridge Builder, to take the building of the Plank Road Bridge over the Sallapoosa River, near Montgomery, Alabama. Address "W," box 564, New York Post Office, with references. 47 2*

CHILDS & TAINTER, Worcester, Mass, Builders of Daniel's Planers, with Read's feed motion, which gives the advantage of planing both ways, and of running slow or fast, either way. 45 6*

IMPORTANT TO SOAP MAKERS—Letters Patent of the United States having been issued to Wm. McCord on the 27th of July, for a valuable improvement in Soap, all manufacturers, venders, and users are hereby cautioned against the use of Kaolin, or other equivalent aluminous minerals, combined with ammonia, as they will, by so doing, infringe this patent, and subject themselves to prosecution. Rights to manufacture this the most valuable soap, are offered for sale on reasonable terms. Apply to WM. McCORD, 141 Sullivan st., N. Y. 47tf

TO CARPENTERS, MILLWRIGHTS, FRAMERS, AND OTHERS—The advertiser will communicate by mail to persons residing in any part of the United States, his complete system of Bevelling Braces, and giving them their exact length, without using figures, or a draught or bevel, and without even measuring their length, and in less time than by the old methods. This new system will apply to all lengths, and cannot fail. It is so simple that men who are no mechanics, can easily comprehend it. Any person remitting one dollar (post-paid) to GEORGE STEVENS, Millwright, Lisburn, Cumberland Co., Pa, will be promptly answered. 1*

SHERRY & BYRAM'S AMERICAN CLOCKS, FOR CHURCHES, PUBLIC BUILDINGS, RAILROAD STATIONS, &c. REGULATORS FOR JEWELLERS, and other styles, designed for Banks, Offices, etc., also Astronomical Clocks. The undersigned have introduced such improvements in the construction of their clocks, as to be enabled to warrant them the most durable and accurate (highest grade to vary less than two minutes in twelve months), of any others now in use. Glass dials for illumination furnished at short notice. Address SHERRY & BYRAM, Oakland Works, Sag Harbor, Long Island, N. Y.

"At the Oakland Works of Sherry & Byram there are made some of the finest clocks in the world."—[Scientific American.

"Mr. Byram is a rare mechanical genius." [Jour. of Commerce. 41 7eow*

IRON FOUNDERS MATERIALS—viz.: good American Pig Iron—grey, mottled and white; No. 1 Scotch Pig Iron, of favorite brands. Pulverized Sea Coal, Anthracitc Charcoal, Soapstone, and Black Lead Facings. English and Scotch patent Fire Bricks—plain, arch, and circular, for cupolas. Fire Sand and Fire Clay. Iron and brass moulding sand; Core sand and flour; always on hand and for sale by G. O ROBERTSON, 135 Water street (corner of Pine), N. Y. 47 6*

PIG IRON MANUFACTURED WITHOUT A BLAST—Persons taking an interest in this matter, or desiring to participate in bringing this new process to perfection, will please to address the subscriber, post-paid. C. S. QUILLIARD.
Rondout, Ulster Co., N. Y. 47 2*

JOHN W. GRIFFITHS—Ship Builder and Marine Architect, 658 Fourth st., N. Y., furnishes models and draughts of all description of vessels, with the computation of stability, capacity, displacement, and necessary amount of impulsion. Propelling power located and proportionably adapted to the form of the vessel, whether sailing or steaming. Mr. G. also superintends the construction of vessels, and may be consulted upon all subjects pertaining to the various departments of the science or practice of ship building. Draughts forwarded by letter to all parts of the world, and to any desired scale; all letters must be post-paid. 46 5*

A SITUATION IS WANTED—By a man, as engineer, who is well acquainted with constructing Steam Engines of the various patterns, and most approved styles in use at the present day; inferior to none in point of duty. Any establishment in want of such a man may address "Engineer," Hastings, Westchester Co., N. Y. No objection to any part of the country. 46 2*

PATENT DRAWING BOARDS,—23 by 29 inches; with scales of degrees in inches, minutely divided. Also paper fastener attached, and T rule. Complete for $10. Sent by Express. Direct (post-paid) to H. W. CHAMBERLIN,
45 tf Pittsfield, Mass.

GWYNNES & SHEFFIELD, Manufacturers of Stave Machinery, Urbana, Ohio.—Our machine for slack work, called the Mowrey Stave Cutter, will cut, dress, and joint, at one operation, from the bolt of wood, in a perfect manner, at the rate of 80 staves per minute, more staves in ten hours than 100 men can set up into barrels in the same time, and at small cost. We are also prepared to furnish the Judson Stave Dresser, for tight barrel work, and other stave Machinery. 44 4*

AARON KILBORN, 4 Howard street, New Haven, Ct., manufactures Steam Engines, Shafting, Presses, Fan Blowers, Lathes, Planers, Artesian Wells, Chain and Force Pumps, Pipe, Heating Apparatus for Houses, etc. 42 10*

PATENT ALARM WHISTLE.—Indicators for speaking pipes, for the use of hotels, steamships, factories, store-houses, private dwellings, etc. etc. This instrument is intended to supersede the use of the bell, being more simple in its arrangement, more effective in its operation, and much less liable to get out of order, being directly connected with the speaking pipe, it requires no lengthy wires in its use, which are continually getting out of order or breaking. There have been several hundreds of them fitted up in this city and vicinity with the greatest success. They can be attached to pipes, which are already fitted up without damage to buildings, and for much less than the cost of a bell, and warranted to operate. The public are invited to call and examine them at the factory of the patentees.

WOOLCOCKS & OSTRANDER.
57 Ann street, New York.
State and County Rights for sale. 40 13

FOR SALE—A complete set of tools for the manufacture of Spring Head Callipers and Dividers, four sizes each. To any person wishing to engage in the manufacture of such articles, an opportunity is offered for purchasing the tools at a very reasonable rate. Inquire of W. J. JOHNSON, Holyoke, Mass. 45 4*

TO STEAM ENGINE BUILDERS, OWNERS, and Engineers.—The subscriber having taken the agency of Aschroft's Pressure Gauges, would recommend their adoption to those interested. They have but lately been introduced into this country, but have been applied to many of our first-class river and ocean steamers, and on several rail roads, on all of which from their simplicity, accuracy, and non-liability to derangement, they have given the utmost satisfaction. CHAS. W. COPELAND, Consulting Engineer, 64 Broadway, N. Y. 43 5*

BEARDSLEE'S PATENT PLANING MAchine, for Planing, Tonguing and Grooving Boards and Plank.—This recently patented machine is now in successful operation at the Machine shop and Foundry of Messrs. F. & T. Townsend, Albany N. Y.; where it can be seen. It produces work superior to any mode of planing before known. The number of plank or boards fed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the abovenamed foundry—or at his residence No. 764 Broadway; Albany. GEO. W. BEARDSLEE. 23tf

MACHINERY.—S. C. HILLS, No. 12 Platt-st. N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's and Law's Planing machines; Dick's Presses, Punches and Shears; Morticing and Tennoning machines; Belting; machinery oil, Beal's patent Cob and Corn mills; Burr mill and Grindstones; Lead and Iron Pipe &c. Letters to be noticed must be post-paid. 26 tf

WOOD'S IMPROVED SHINGLE MACHINE—Patented January 8th 1850, is without doubt the most valuable improvement ever made in this branch of labor-saving machinery. It has been thoroughly tested upon all kinds of timber and so great was the favor with which this machine was held at the last Fair of the American Institute that an unbought premium was awarded to it in preference to any other on exhibition. Persons wishing for rights can address (post-paid) JAMES D. JOHNSON, Bridgeport, Ct.; or WM. WOOD, Westport; Ct., All letters will be promptly attended to. 22tf

TO INVENTORS—The subscribers will enter into arrangements, on the most reasonable terms, for furnishing Drawings, Patterns, and Models, believing that they have one of the most thorough and scientific men, in that line of business, to be found in New York. Their object is merely to fill up time, they not having sufficient work of their own to keep him in steady employment, and do not like to have him leave for fear they could not obtain his services when required. Apply at Dunlop's Manufacturing Emporium, No. 36 Gold street.
41 13* FRASER & EVERITT.

PAINTS, &c. &c.—American Atomic Drier Graining Colors, Anti-friction Paste, Gold Size, Zinc Drier, and Stove Polish.
QUARTERMAN & SON, 114 John st.,
23tf Painters and Chemists.

CHARLES F. MANN, FULTON IRON WORKS, Below the Troy and Greenbush Railroad Depot, Troy, N. Y.—The subscriber builds Steam Engines and Boilers of various patterns and sizes, from three horse power upward; also, his Portable Steam Engine and Boiler combined, occupying little space, economical in fuel, safe, and easily managed; Double Action Lift and Force Pumps; Fixtures and Apparatus for Steam or Water; Tools for Machine Shops; Shafting and Pulleys for Factories. Brass Castings and Machinery made to order at short notice. Steam engines furnished cheaper than can be had elsewhere, of the same quality. 30tf

LATHES FOR BROOM HANDLES, Etc.—We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pillars, Rods and Rounds; Hoe Handles, Fork Handles and Broom Handles.

This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch and work as smoothly as on a straight line—and does excellent work. Sold without frames for the low price of $25—boxed and shipped with directions for setting up. Address (post.paid) MUNN & CO.
At this Office.

1852 TO 1856.----WOODWORTH'S PAtent Planing, Tongueing, Grooving, Rabeting, and Moulding Machines.—Ninety-nine hundredths of all of the planed lumber used in our large cities and towns continues to be dressed with Woodworth's Patent Machines. Price from $150 to $760. For rights in the unoccupied towns and counties of ~~New York and Northern~~ Pennsylvania, apply to JOHN GIBSON, Planing Mills, Albany, N. Y. 26tf

LEONARD'S MACHINERY DEPOT, 109 Pearl-st. and 60 Beaver, N. Y.—Leather Banding Manufactory, N. Y.—Machinists's Tools, a large assortment from the "Lowell Machine Shop," and other celebrated makers. Also a general supply of mechanics' and manufacturers' articles, and a superior quality of oak-tanned Leather Belting.
45tf P. A. LEONARD.

PATENT CAR AXLE LATHE—I am now manufacturing, and have for sale, the above lathes; weight, 5,500 lbs., price $600. I have also for sale my patent engine screw lathe, for turning and chucking tapers, cutting screws and all kinds of common job work, weight 1500 lbs., price $225. The above lathe warranted to give good satisfaction. J. D. WHITE, Hartford, Ct. 39 26*

A. B. ELY, Counsellor at Law, 46 Washington st., Boston, will give particular attention to Patent Cases. Refers to Munn & Co., Scientific American. 13tf

TRACY & FALES, RAILROAD CAR MANUFACTORY—Grove Works, Hartford, Conn. Passenger, freight, and all other descriptions of railroad cars and locomotive tenders made to order promptly. 26tf

LOGAN VAIL & CO., No. 9 Gold street, New York, agents for George Vail & Co., Speedwell Iron Works, have constantly on hand Saw Mill and Grist Mill Irons, Press Screws, Bogardus' Horse-Powers, and will take orders of Machinery of any kind, of iron and brass; Portable Saw-mills and Steam Engines, Saw Gummers of approved and cheap kind, &c. Gearing, Shafting, large and small, cast or of wrought iron. 11 1y

NEW HAVEN MANUFACTURING COMpany, Tool Builders, New Haven, Conn., (successors to Scranton & Parshley) have now on hand $25,000 worth of Machinist's Tools, consisting of power planers, to plane from 5 to 12 feet; slide lathes from 6 to 18 feet long; 3 size hand lathes, with or without shears; counter shafts, to fit all sizes and kinds of universal chuck gear cutting engines; drill presses, index plates, bolt cutters, and 3 size slide rests. The Co are also manufacturing steam engines. All of the above tools are of the best quality, and are for sale at 25 per cent. less than any other tools in the market. Cuts and list of prices can be had by addressing as above, post-paid. Warehouse No. 12 Platt st., New York, S. C. HILLS, Agent N. H Man'g Co. 45tf

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SCIENTIFIC MUSEUM.

Elementary Mechanics.

STEAM.—A cubic inch of water will produce a cubic foot, or 1,728 cubic inches of steam; and this steam will heat 6 cubic inches of water from the atmospheric temperature to 212°, to effect its condensation. Hence six times the difference of temperature, or fully 900° Fahr., are employed in giving elasticity to steam. 100 cubic inches of steam at the standard pressure, 30 inches, weigh 14·68 gr.

General formula to calculate the general power of an engine: Let a horse-power be equal to 150 lbs., raised 13,200 feet per hour, or 396,000 lbs. raised one inch per minute.

Let d=diameter of piston in inches,
p=pressure per square inch in piston,
$2s$=number of strokes made per minute,
l=length of the stroke in inches,
and h=number of horses required to do the work of any engine.

$\therefore (d^2 \times 7854 \times p \times 2s \times l)$ the whole power.

$$\frac{d^2 \times 7854 \times y \times 2s \times l}{396{,}000} = h$$

Whence d, p, s and t, may be easily found as required—[Mech. Mag.

HORSE-POWER OF STEAM ENGINES.—The English rule for a cylinder 48 inches in diameter would be founded on two assumptions; the first, that the speed of the piston would be 220 feet per minute, and the second, that the surplus pressure on the piston would be 7, or 7·1, or 7·3 lbs. per square inch. The practice, we believe, varies within these limits, hence

$$\frac{42^2 \times 7854 \times 220 \times 7{\cdot}1}{33{,}000} = 90 \text{ horse-power}$$

The Scotch rule takes the actual speed of the piston per minute, and the mean pressure per square inch, and then employs 44,000 lb., as the divisor on the gross, instead of 33,000 lb. on the net or surplus power of the steam.

The effect of this rule is an allowance of 25 per cent. of the gross power for engine resistances and friction.

Under the given conditions $14 \times 33{,}000 \div 44{,}000 = 10\frac{1}{2}$ lbs. is the surplus steam pressure taken, instead of 7·1 lbs., the assumed pressure by the English rule.

To calculate the pressure which a steam engine boiler will bear without bursting:—Multiply the tenacity of the metal (which, if it were in one piece, would be about 60,000 lbs., or 6-7 that of good wrought-iron, but, as it is rivetted together, call it only 30,000 lbs.) by the thickness of the boiler, and divide it by half the diameter in inches. The quotient will be the number of pounds it will bear on every square inch without bursting. No material should be loaded with more than one-third of the greatest strain it can support.

GENERAL PROPORTIONS OF STEAM ENGINES.—The air-pump and condenser are usually made of the same size, being equal to one-half of the area of the cylinder and one-half of the stroke, or one quarter of the content.

The steam and eduction pipes, and all other pumps and valves, are one-fifth of the diameter of the cylinder.

The water required for condensation is from 3 to 3½ gallons per minute for every horse-power; and, for the supply of the boiler, ten gallons per horse-power per hour.

With these proportions, the piston should travel at the rate of 200 feet per minute.

Table of the Elastic Force of High Pressure Steam, calculated by MM. Dulong and Arago:

Atmos.			Atmos.		
212 Fah.	1	374·00 Fah.	12		
233·96	1n	380·66	13		
250·52	2	392·86	15		
263·84	2n	398.48	16		
275·18	3	403·82	17		
285·08	3n	408·92	18		
293·72	4	413.96	19		
301·28	4n	418·45	20		
308·84	5	422·96	21		
314·24	5n	427·28	22		
320·36	6	431·42	23		
326 26	6n	435·56	24		
331·70	7	439·34	25		
336·86	7n	457·16	30		
341·96	8	472·73	35		
350·78	8n	486·59	40		
358·88	10	491·14	45		
367·34	11	510·60	50		

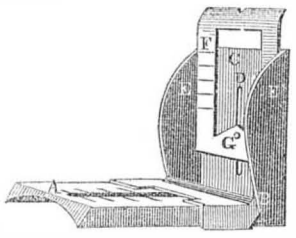
One square foot of surface of steam-pipe will warm 200 cubic feet of space.

Southern Manufactures.

The Mobile Tribune says, "Messrs. I. D. Spear & Co., founders, have just completed two twenty-five horse-power engines, which, for strength of construction, finish, and perfection of movement, are equal to any work of the kind ever made in Northern or Western foundries. The same firm has also finished two sugar-mills, kettles, and all other apparatus, for Tobasco, Mexico."

P. B. Cahoon, of Kenosha, Wis., has raised a specimen of pie-plant, the leaf of one of the stalks of which measures three feet and one inch across by three feet long, exclusive of the stem, which is thirteen inches in circumference. Another stem was about one and a half feet long by six inches in circumference.

Adjustable Rifle Sight.



This engraving is a view of an adjustable sight for rifles, registered by Henry Maling, of London, and described in the Practical Mechanics Journal, from which we have selected it, as something of interest to our people.

The base plate, A, fits into a grooved or slotted bed on the top of the gun's breech, and to this plate is hinged at B, the thin plate, C, having a slot, D, formed through its centre. The sides of this plate are turned over, as at E, and a thin metal plate, F, is fitted to move vertically between the two sides of the plate, to which it is connected by the rivet-pin, G, which is capable of sliding up the slot, D. The aim is taken through the angular notch on the upper edge of the sliding-plate, F.

When out of use, the entire apparatus folds down on the surface of the plate, A, leaving the turned-up notched portion projecting above the band; and when required for use, the sight is elevated by simply pushing forward the small slide in the horizontal groove in the centre of the base plate, which is graduated for the purpose. When a sufficient elevation for a very long range cannot be obtained by this means, the sliding plate, F, is then raised, as shown in our engraving—one side being graduated for that purpose, whilst the top of the corresponding edge, E, serves as an indicator of the amount of elevation.

Recent Foreign Inventions.

COATING AND ORNAMENTING ZINC.—The following are the leading features of a patent recently granted in England to Francis H. Greenstreet, and which is selected by us from the London Mechanics' Magazine:—

These improvements consist in coating and ornamenting zinc or zinced surfaces by means of acids, alone or combined with other matters capable of acting chemically on the surfaces. The solution used may be applied by sprinkling, dabbing, spreading, or marbling; and the surfaces coated are capable of further ornamentation by painting, which may be done with common oil colors. Among the preparations which the patentee recommends for coating and ornamenting zinc or zinced surfaces, are the following:—

1. Muriatic acid diluted with water to a strength of 1·114. The coating produced by this solution is of a light ash color.

2. Chrome yellow, ground fine with soft water, and mixed with preparation 1 to a liquid consistence. This gives a yellowish grey color.

3. The pigment known as "mountain or Saxony green," mixed gradually with preparation 1 to a thin paste, and stirred till effervescence ceases. This produces an iron grey color tinged with green.

4. White lead, ground fine with soft water, and mixed with preparation 1, produces a grey coating. Where expense is not an object, Kremnitz white may be used instead of the white lead.

5. Flour of sulphur ground fine with water and mixed with preparation 1. This mixture gives a yellowish white coating.

6. Butter of antimony may be mixed with the before-mentioned preparations. When used alone it produces a black color, but when mixed, does not affect the color of the preparation with which it is used. It produces a good ground for subsequent painting or other application.

7. Butter of antimony diluted with distilled water. This produces a fine coating, resembling in color India ink.

8. Butter of antimony mixed with spirits of turpentine. This preparation, when applied alone, produces a black color; it may have pigments of different kinds mixed with it, and the effect will then vary according to the nature of the color employed.

The surfaces after having been coated by the means above mentioned, and further ornamented, if thought desirable, should be protected by a coating of varnish. Copal varnish may be used for this purpose; but the patentee recommends the use of wax, or mixtures containing wax, as this substance is an effectual preservative against oxidation, and easily renewed or kept in good condition.

Application of Screw Propellers to Ships of the Line.

Recent experiments with the screw propeller, in the French navy, have settled the question of the superior economy and advantages of uniting steam with canvas in vessels of war. A well-informed correspondent of the National Intelligencer, says the trial-trip of the Charlemagne, which embraced a voyage to the Dardanelles and back to Toulon, via Naples, Messina, Malta, the Piræus, Smyrna, &c., and occupied some two months, surpassed all expectations. The average run, under steam exclusively, was nine knots an hour; the vessel carrying eighty heavy guns. Both the French and English governments have adapted the screw to several of their frigates and line-of-battle ships. The Prince Albert, with a formidable battery of one hundred and twenty guns, may now be driven to any quarter, in defiance of the elements, at the rate of eight or ten knots an hour. Of the one hundred and twenty vessels which the French put in commission this year, seventy-one are steamers. The correspondent says:

"The solution of the practicability of the application of propellers to armed sailing ships, and their adoption in the British and French navies, renders it absolutely necessary that American vessels should be provided also with this additional motive power. A conflict with a French and American seventy-four, the former using both steam and canvas, and our own vessel only the latter, would be a most unequal struggle. The advantage of choosing his position would lie altogether with the Frenchman, and while he could baffle the efforts of his adversary to bring him under his guns, he would be able to rake his decks at will, and attack him on every side. How would it be possible, also, for a frigate to escape such a line-of-battle ship? or when sighted by a hostile squadron, to distance her pursuers, if aided by propellers? Such vessels, besieging a fortress or town, wheeling as on a pivot, and pouring their sixty-gun broadsides from any point, entirely independent of wind and tide, would be the most formidable engines of war ever brought into action. If the lower tier of ports of the Pennsylvania were closed up, and a screw engine adjusted to her now comparatively useless hull, she might be sent to the Mediterranean, where a ship of her size and armament is more than any where else desirable, as a fitting representative of a powerful nation.

Steam of Old.

Dr. Lardner says, that among other amusing anecdotes showing the knowledge which the ancients had of the mechanical force of steam, it is related that Anthemius, the architect of Saint Sophia, occupied a house next door to that of Zeno, between whom and Anthemius there existed a feud. To annoy his neighbor, Anthemius placed on the ground floor of his house several close digesters, or boilers, containing water. A flexible tube proceeded from the top of each of those, which were conducted through a hole made in the wall between the houses, and which communicated with the space under the floors of the rooms in the house of Zeno. When Anthemius desired to annoy his neighbor, he lighted fires under his boilers, and the steam produced by them rushed in such quantity, and with such force, under Zeno's doors, that they were made to heave with all the usual symptoms of an earthquake. The chronicles do not say whether Zeno cowskinned Anthemius or not, but he richly deserved it.

The St. Andrews, N. B., people were delighted, at noon of the 23rd ult., by the sight of the first locomotive ever put in motion in the Province of New Brunswick. This was on the first section of the St. Andrews and Quebec Railroad.

Three blocks of California marble, ordered by the Legislature of that State for the Washington testimonial monument, were nearly ready for shipment at last accounts. One block is of grey marble, with fine black veins running through it; another is nearly black, and the third most beautifully variegated. They are each four feet in length, by twenty-two inches square.

PROSPECTUS

OF VOLUME VIII.,

OF THE

SCIENTIFIC AMERICAN

The EIGHTH VOLUME of the SCIENTIFIC AMERICAN commences on the 18th of September, and as a great proportion of our readers usually commence their subscriptions at this point, we take occasion to extend them our gratitude for the encouraging and liberal support heretofore bestowed upon our humble efforts, and to re-assure them of our determination to advance it still higher in the scale of utility, and, if possible, in their own estimation. We aim at an honorable independence in discussing upon all subjects, and, in some instances no doubt, our readers may have been surprised at our determined opposition to highly lauded discoveries in the Arts and Sciences.

Time tries all things, and it is with some degree of pride that we revert to the efforts made through the columns of the Scientific American, to establish sound views respecting several conspicuous miscalled discoveries. Since the commencement of this Volume, that peerless Exhibition of the Industry of all Nations closed its gorgeous display, affording a delightful episode in the stern page of the world's history. Above and beyond all criticism it has passed away, leaving a world-wide influence, beneficial to every branch of industry, and although not profusely represented by gew-gaws and tinselry,—the character of our country shone forth with magnificence in all the elements of substantial utility. Acting under the stimulus suggested by the success of the Great Exhibition, the enterprizing citizens of New York have determined to construct a Crystal Palace of no mean dimensions, and as this is likely to become an important feature in our history, we shall endeavor to present our readers with descriptions and illustrations of such novelties as may be deserving attention.

The present form of the Scientific American will be preserved as most suitable for binding and preservation. The paper will be of the best texture, and we shall aim to store its pages with practical knowledge in every branch of the Arts and Sciences. Invention claims important attention, as one of the fundamental agencies in the world's advancement; hitherto we hope to have satisfied our readers by our weekly summary of "New Inventions." The Weekly List of Patent Claims, officially reported for our columns, is a distinguishing feature, which must commend itself to every one interested in Patents.

We need the co-operation of our readers to enable us to publish a journal, worthy of their support. at two dollars per annum. We have never appealed to them in vain, and the Premiums offered for the largest list of subscribers, will, we presume, encourage new efforts. All subscriptions are payable in advance.

We repeat our warning against Travelling Agents, as none are accredited from this office.

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